NRC INSPECTION MANUAL PIPB

MANUAL CHAPTER 0610*

REACTOR INSPECTION REPORTS

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REACTOR INSPECTION REPORTS

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0610-01 PURPOSE

To provide guidance on content, format, and style for power reactor inspection reports.

0610-02 OBJECTIVES

To ensure that inspection reports:

02.01 Clearly communicate significant inspection results to licensees, NRC staff, and the public.

02.02 Provide a basis for significance determination and enforcement action.

02.03 Present information associated with significant inspection findings in a manner that will be useful to NRC management in developing longer-term, broad assessments of licensee performance.

0610-03 DEFINITIONS

ALARA Issue. An inspection issue that involves a failure to properly implement procedures and engineering controls based on sound radiation protection principles to ensure that doses associated with plant operations and maintenance are maintained as low as reasonably achievable.

Apparent violation. A potential noncompliance with a regulatory requirement that has not yet been formally cited as a violation in a notice of violation or order.

Apparent Significant Issue. Inspection findings that have been processed through the SDP and whose preliminary significance determination is greater than "green", although a final determination of significance may be pending.

Closed Item. A matter previously reported as a noncompliance, an inspection finding, a licensee event report, or an unresolved item, that the inspector concludes has been satisfactorily addressed based on information obtained during the current inspection.

Credible. A scenario offering reasonable grounds for being realistic (given a set of existing conditions postulating a scenario with no more than one "if").

Cross Cutting Issues: Cross cutting issues are those concerns related to the areas of human performance, problem identification and resolution, and safety conscious work environment issues which have the potential to affect multiple cornerstones.

Deficiency. (As applies to emergency preparedness.) A demonstrated level of performance (e.g., in a drill) that could have detracted

from effective implementation of the emergency plan in the event of an actual emergency.

Deviation. A licensee's failure to satisfy a regulatory commitment.

Draft Inspection Report. Any version of the inspection report before its official issuance.

Escalated Enforcement Action. A notice of violation for any Severity Level I, II, or III violation (or problem), or a civil penalty or order based on a violation.

Finding. An issue or observation with some significance that has been placed in context, and determined to be of sufficient significance to warrant more detailed analysis using the SDP, or has extenuating circumstances. To be a finding, it must pass through the threshold screening process described in Appendix E Threshold for Documentation in this MC.

Inspection. The examination and assessment of any licensee activity to determine its effectiveness, to ensure safety, and to determine compliance with the NRC's rules and regulations.

Inspection Document. Any material obtained or developed during an inspection that is considered to be an NRC record (see below).

Integrated Inspection Reports. A reactor inspection report that combines inputs from several inspections (resident, regional, etc.) conducted within a specific period.

Issue. A well defined observation or collection of observations which are of concern and may be significant and may or may not result in a finding.

Licensee. The applicant for or the holder of an NRC license, construction permit, or combined license.

Low Significance. An issue with low to moderate risk, typically categorized as a white inspection finding resulting from the significance determination process.

Minor Issue. An issue that is not significant and is characterized by (1) having no actual or little potential impact on safety, (2) is isolated and not evidenced by programmatic deficiencies, and (3) relates to licensee administrative limits rather than NRC regulatory limits. Other considerations are addressed in section 05.02.b and Appendix D.

Noncited Violation (NCV). A violation for which the staff chooses to exercise discretion and refrain from issuing a 10 CFR 2.201 notice of violation.

Noncompliance. A violation, noncited violation, deviation, or non-conformance.

Notice of Violation (NOV). A formal written citation in accordance with 10 CFR 2.201 that sets forth one or more violations of a legally binding regulatory requirement.

NRC Record. Any written, electronic, or photographic record under legal NRC control that documents the policy or activities of the NRC or an NRC licensee (see also the definition in 10 CFR Part 9).

Observation A fact; any detail noted during an inspection.

Open Item. A matter that requires further inspection or evaluation. The reason for requiring further inspection, or evaluation may be that the matter has been identified as a noncompliance, unresolved item, licensee event report or an item for which the significance has not yet been determined.

Potentially Generic Issue. An inspection finding that may have implications for other licensees, certificate holders, and vendors whose facilities or activities are of the same or similar manufacture or style.

Regulatory Commitment. An explicit statement to take a specific action, agreed to or volunteered by a licensee, where the statement has been submitted in writing on the docket to the NRC.

Requirement. A legally binding obligation such as a statute, regulation, license condition, technical specification, or order.

Significant. A meaningful issue requiring attention by either the NRC or the licensee or both.

Significance Determination. The characterization of the significance of an inspection finding using the SDP outcome color scheme to identify the level of risk significance (i.e.,green, white, yellow, red).

Significance Determination Process (SDP). The process used to determine the risk significance of pertinent inspection findings.

Unresolved Item. A matter about which more information is required to determine whether the issue in question is an acceptable item, a deviation, or a violation, or for which the significance has not been determined.

Vendor. A supplier of products or services to be used in an NRC-licensed facility or activity. In some cases, the vendor may be an NRC or Agreement State licensee (e.g., nuclear fuel fabricator, radioactive waste broker) or the vendor's product may be required to have an NRC Certificate of Compliance (e.g., certain transport packages such as waste casks or radiography devices).

Very Low Significance. An issue with a minimal level of risk, typically categorized as a Green inspection finding using the significance determination process.

Violation. The failure to comply with a legally binding regulatory requirement, such as a statute, regulation, order, license condition, or technical specification.

Weakness. (As applies to emergency preparedness.) A demonstrated level of performance (e.g., in a drill) that could have precluded effective implementation of the emergency plan in the event of an actual emergency.

Willfulness. An attitude toward compliance with requirements that ranges from the careless disregard for requirements to a deliberate intent to violate or to falsify.

0610-04 RESPONSIBILITIES

All NRC inspectors are required to prepare inspection reports in accordance with the guidance provided in this inspection manual chapter. General and specific responsibilities are listed below.

04.01 General Responsibilities—Reactor Inspections. Each inspection of a reactor should be documented in a report consisting of a cover letter, a cover page, a summary of findings, and inspection details.

04.02 Report Writing

a. Inspectors have the primary responsibility for ensuring that inspection findings are accurately reported, and that referenced material is correctly characterized. Advice, subjective opinions and recommendations are not to be included in inspection reports.

b. Inspectors are responsible for ensuring that the content of the report does not conflict with the information presented at the exit meeting. When the report provides information that differs significantly from that presented at the exit meeting, the inspector (or the report reviewer) should discuss those differences with the licensee before the report is issued. The threshold for documenting inspection results is not intended to limit the open dialogue between the inspectors and the licensee.

c. Report writers and reviewers should ensure that inspection reports follow the general format given in this chapter and in the enclosed sample report (see Exhibits 1-2).

d. For inspections conducted by regional and resident inspectors, the report number is in the following form:

Docket No./Year - [sequential number of the report in that year] (e.g., 50-363/00-01)

For inspections conducted by NRR, NMSS, or other headquarters offices, the report number is in the following form:

Docket No./Year - 2 [sequential number of the report in that year] (e.g., 50-250/00-201)

NOTE: The report number format given here is for use in the inspection report itself. This format may be modified as needed for other applications (e.g., for Item Report and Analysis Module (IRAM) entries) because of electronic constraints and other considerations, such as using a 4-digit number for the year.

04.03 Report Review and Concurrence

a. Before issuance, each inspection report should, as a minimum, be reviewed by a member of NRC management familiar with NRC requirements in the area inspected.

b. The report reviewer (i.e., the member of management referred to above) should establish that the findings are consistent with NRC policies and requirements.

c. The report reviewer should ensure that risk assessments made in the inspection report are in accordance with the SDP.

d. Regional administrators and office directors should establish internal procedures to provide a record of inspectors' and reviewers' concurrences. The procedures should address how to ensure continued inspector concurrence when substantive changes are made to the report as originally submitted, and how to treat disagreements that occur during the review process. As a minimum, substantial changes should be discussed with the inspector or inspectors involved to ensure continued concurrence, and disagreements that cannot be adequately resolved should be documented.

NOTE: The record of inspector and reviewer concurrence is maintained by the issuing office. This concurrence record is not included in the generally distributed version of the report.

04.04 Report Issuance

a. For regional inspection reports, the applicable division director or designated branch chief is responsible for the report content, tone, and overall regulatory focus. For integrated reports issued to reactor licensees, the Director, Division of Reactor Projects (DRP) or designated branch chief is responsible for issuing the report to the licensee.

04.05 Report Timeliness

a. General Timeliness Guidance. Inspection reports should be issued no later than 30 calendar days after inspection completion. (45 calendar days for integrated reports and major team inspections.)

NOTE: Inspection completion is normally defined as the day of the exit meeting. For resident inspector

and integrated inspection reports, inspection completion is normally defined as the last day covered by the inspection report.

b. Reports Preceding Escalated Enforcement Actions. Timeliness goals should be accelerated for inspection reports covering potential escalated enforcement actions. For specific enforcement timeliness goals, see the NRC Enforcement Manual.

c. Expedited Reports for Significant Safety Issues. Whenever an inspector identifies an issue involving a significant or immediate public health and safety concerns, the first priority is facility and public safety; issues of documentation or enforcement action are secondary. Based on the circumstances of the case, an expedited inspection report may be prepared that is limited in scope to the issue, or expedited enforcement action may be taken before the inspection report is issued. The NRC Enforcement Manual provides additional guidance on matters of immediate public health and safety concern.

0610-05 GUIDANCE—INSPECTION REPORT

This section relates primarily to matters of content in the inspection report details. Some guidance on the content of report cover letters and Summary of Findings is given in Sections 06.01 and 06.03, respectively.

Although this guidance applies to all power reactor inspections, additional guidance for reports documenting supplemental inspections is found in Appendix B.

05.01 Observations, Issues and Findings. As used in this chapter, the term "observation" refers to a fact—any detail noted during an inspection. An "issue" is an observation or series of observations that are of concern to the inspector. The term "finding" designates an issue or observation that has been placed in context using the threshold screening process described in this MC section 05.02.. The objective of writing an inspection report is to document significant inspection findings in the appropriate context. If an observation or issue has little or no significance when placed in context and is not contrary to requirements, then it should not be documented in the inspection report. In general, the only issues documented in inspection reports are issues which involve or relate to (1) Violations, (2) Cornerstones, (3) the licensee's problem identification and reporting program, (4) Licensee event reports, (5) Performance Indicators and (6) findings related to cross cutting issues.

Violations contrary to licensee administrative limits and other issues which meet the Minor Violation / Issue criteria also should not be documented. (See Appendix D, Guidance for Classifying Violations as Minor Violations).

a. Observations. The most basic results of an inspection are the facts an inspector gathers—through watching work activities,

examining equipment, interviewing licensee employees, reviewing records, and other inspection methods. As documented, these observations should be factual—that is, an inspector should not report hunches, unsubstantiated hearsay, or unverified opinions. Observations are only documented as part of describing a finding. Observations without appropriate significance context should not normally be documented .

When documenting an observation, use language that clearly identifies how the observation was discovered and verified.

Inspectors should, to the extent possible, document the following types of information: the time of discovery, the length of time the problem existed, the type, size, or model of the equipment, and whether the equipment is available. If the equipment is not available, the inspector should obtain the necessary information to make an SDP analysis. The inspector should determine the availability of alternate equipment and any changes in risk due to the unavailability. Section 05.03 discusses how to determine the appropriate level of detail.

b. Findings. Findings are observations or issues with some significance that have been placed in context by the SDP process. Documenting how an observation or issue relates to a requirement or standard, and what factors were used in arriving at the SDP classification changes the observation or issue to a finding.

1. Referencing Requirements and Standards. Whenever possible, (an observation or issue) should be related to a requirement or standard. Often this context is achieved by direct numerical comparison:

   EXAMPLE: "The inspector observed, on control room Panel R442, that service water flow through residual heat removal (RHR) Heat Exchanger B was indicating approximately 5900 gallons per minute (gpm). The surveillance minimum service water flow, as given in TS 4.5.2.e, is 6500 gpm."

   For some observations or issues, the standard to be referenced, in creating a finding, will be qualitative. These observations should normally be limited to issues which are SDP candidates. For example, a finding that the licensee unknowingly made a measurable increase in plant risk due to the simultaneous conduct of multiple low risk work activities. No TS violation occurred but the issue required a Phase 2 SDP evaluation and should be discussed in a report.

2. Clarifying Findings. The reader should be left with a clear sense of what the finding is. Often this is made obvious by the context, or by relating the observation or issue to a requirement or standard. For each paragraph of the inspection report the reader should be able to draw

a conclusion, a point or recognize additional information which contributes value to the topic. If the observation or issue is "neutral" and does not relate to a requirement, standard or does not require further attention, the inspector should question whether the item is significant enough to be documented at all. Neutral observations should be very limited if they are documented. In some cases, a significant "neutral" observation can be placed in context by its relation to maintaining public health and safety, pertinent regulatory requirements or to past performance issues: In the following case a minor issue becomes significant because it is repetitive and because of its reflection on maintaining public health and safety.

EXAMPLE: "Total external exposure for Refueling Outage 2R6 was 321 rem, which slightly exceeded the outage goal of 315 rem. The total external exposure received was 15 percent higher than the total for the previous outage. According to the licensee's analysis, this difference was primarily due to the extensive steam generator tube sleeving and plugging performed during Outage 2R6."

3. Providing Context for Significance. Fully assessing the significance of finding may require consideration of many factors as directed in the SDP. In addition, on a case-by-case basis additional information may help with proper characterization of the finding: Who was involved in the issue? Has this finding occurred before? Is a trend or pattern developing? Who found the problem? Did the licensee have an opportunity to discover an issue sooner? Has the licensee entered the issue in their corrective action system? How does the licensee characterize the significance of this matter?

The report need not always answer each of these questions, and need not provide every supporting detail for every finding. The inspector should weigh the circumstances impartially, and should include in the report those details that contribute to the significance of the finding and the readers understanding of the finding, regardless of whether they make the finding appear more severe or more benign. In all cases, the report should address the factors required for proper SDP determination. However, for findings that are determined to be within the licensee's response band (green) during initial SDP screening, less detail is required.

NOTE: An inspector should always document supporting details for findings. On the other hand, inspectors should be careful not to make direct statements in the report details regarding the safety significance of the noncompliance that may not be consistent with the SDP determination.

Since the process of assessing significance (or translating observations or issues into findings) can be subjective, it requires skill, experience, and judgment, and demands that the inspector carefully consider all viewpoints. The inspector should make every effort to understand and fairly characterize the licensee's perspective. In addition, the inspector's final assessment of a finding's significance, as determined by the SDP, should be apparent to a knowledgeable reader.

05.02 Thresholds of Significance and Cross-cutting Issues. The purpose of this section is to provide guidance on how to screen out violations and issues that do not rise to a level of significance which warrant documentation, and when and how to document findings related to cross-cutting issues, (refer to Appendix E Figure 1). The guidance provides two screening paths which lead to documenting issues or violations. One path screens the issues through the SDP which then becomes findings with a color assigning an associated risk significance. In the other path, the issue has extenuating circumstances or is not suited for the SDP and is determined to be a finding without assigning a color or risk significance. Each path leads to a final question whether the finding is a violation or not. If the finding was determined in the SDP and was determined to be a violation then it would have a color and risk significance associated with it. If the finding resulted from being an extenuating circumstance and it was a violation then it would have no color or risk significance associated with it. In either case the issue becomes documented.

The process utilizes three sets of screening questions and a flow diagram, contained in Appendix E. The screening questions should not prevent any significant issue from being documented but are intended to provide a greater level of consistency regarding the type and significance of issues which NRC inspectors may consider as minor and not document. It is important to not dilute significant issues with minor issues and mis-prioritize NRC and licensee resources. In most cases, issues that do not require additional attention or tracking by the NRC and violations which are considered minor are not documented. The NRC generally permits licensees to correct these types of issues without additional inspector follow up or documentation.

Inspectors should use Appendix E Figure 1 and group 1, 2 & 3 questions in determining if an issue should be documented in an inspection report. This guidance is also included in MC0609, "Significance Determination Process". The decision points in this process are discussed in general detail below:

a. Issues. The inspector first makes an observation or collection of observations which is believed to be an issue. The inspector should determine whether the issue has sufficient significance to warrant further analysis or documentation by determining whether the issue is a "Minor" concern.

b. Minor Issue/Violation (Group One Questions). Previous guidance stated that a minor issue/violation was an issue that was not significant, and was characterized by (a) having no actual or little potential impact on safety, (b) being isolated and not evidenced by programmatic deficiencies, and (c) related to licensee administrative limits rather than NRC regulatory limits. This guidance has been supplemented and clarified by NRC Office of Enforcement (OE) "Guidance for Classifying Violations as Minor Violations", which is attached as Appendix D. The guidance in Appendix D is the most recent information, developed by Office of Enforcement, and provides the best examples of what constitutes "Minor Issues". However, in general the inspector should use Appendix E "Group One Questions" as a filter to determine if an issue can be considered minor. Appendix D should also be consulted in determining whether an issue has more than minor significance.

If the answer to any question is "Yes" the issue is considered more than minor and the inspector should determine if the issue affects a cornerstone by asking Appendix E group 2 questions. If the answer to all the questions is "No" the issue can be considered Minor. However, the inspector should also review the group 3 questions to determine whether the issue has extenuating circumstances warrant it being documented.

Note that documenting a minor violation may be necessary in documenting closure of a licensee event report, as part of the resolution to an allegation, or if the associated technical information relates directly to an issue of agency-wide concern (e.g. to document the results of an NRC temporary instruction (TI)). If the inspector determines that it is necessary to document a minor issue which is also a violation, then it should be documented as a minor violation with a reference to Section IV of the NRC Enforcement Policy, such as: "This failure constitutes a violation of minor significance and is not subject to formal enforcement action in accordance with Section IV of the NRC's Enforcement Policy" Minor violations shall not be included in the Summary of Findings, and shall not be given a tracking number. If an issue already has an enforcement action (EA) number or other tracking number and is determined to be minor, it is acceptable to use the existing number when discussing the minor violation.

c. Issues Affecting Cornerstones (Group 2 Questions).

Generally speaking, most issues discussed in inspection reports are those affecting cornerstones and the cross cutting areas of human performance, safety conscience work environment, problem identification and resolution, as well as violations of requirements. The SDP evaluates risk significance and assign colors to those issues which affect a cornerstone. Appendix E group 2 questions should be used to determine whether an issue affects a cornerstone.

If the answer to any question is "yes", the issue should be analyzed using the SDP process and documented in the inspection report and assigned a color. If the answers to all group 2 questions are "no" then the inspector should determine whether there are extenuating circumstances which warrant documenting the issue by reviewing Appendix E group 3 questions.

d. Extenuating Circumstances (Group Three Questions).

If an issues is either minor or more than minor and does not affect a cornerstone, there should be extenuating circumstances associated h the issue in order to be documented. Appendix E questions in group 3 should be used to determine whether an issue has extenuating circumstances. If all the answers to the questions are "No" the issue does not have extenuating circumstances and would not normally be documented. If the answer to any question is "yes" the issue should be documented as a finding or a violation either of which would not have a color assigned. Since the issue/violation did not go through the SDP, a color associated with its risk significance cannot be assigned. All violations which are not minor but which are not assessed using the SDP will be assessed through the enforcement policy for assignment of a severity level.

e. SDP Analysis. All issues, violations or concerns that have greater than minor significance and are related to cornerstone, including cross cutting issues, should be documented with a risk significance and color assigned to them after evaluation by the SDP.

f. Violations. The Significance Determination Process assigns findings a risk significance and color whether it is a violation or not. If an issue does not go through the SDP no risk characterization or color is assigned. All violations are referred to the Enforcement Policy for dispositioning either with or without a color. The primary guidance for all matters related to enforcement, including documentation, is in the NRC Enforcement Policy (NUREG-1600), and the NRC Enforcement Manual (NUREG/BR-0195). See Section 05.04 for guidance on documenting enforcement issues. If a violation did not exist, the issue is a finding and should be documented with or without a color depending on whether the SDP is utilized or not. If the issue is determined to be a violation it should be documented as a non-cited violation or as a Notice of Violation with or without a color. If the issue is not a violation, the issue should be documented as a finding with or without a color depending on whether the issue was evaluated by the SDP or not.

g. Cross-cutting Issues. Cross-cutting issues are those concerns related to human performance, problem identification and resolution, and safety conscious work environment, which have the potential to affect multiple cornerstones. These issues should be documented in the inspection report only if they are related to the cause of a finding which is evaluated by the

SDP or if there are multiple observations with a similar theme that impact one or more cornerstones.

1. Single Issues

A single cross-cutting issue must be related to a cornerstone and have a credible impact. Pertinent cross-cutting aspects of a single issue should be incorporated into the inspectors description of the finding as a contributing or direct cause of the finding, as appropriate. The significance of the finding is determined by the SDP. Inspectors should ensure that the cross-cutting aspects are highlighted in the inspection report and the Summary of Findings. Cross-cutting issues that are associated with an issue that filters out as minor after being subjected to the analysis of Appendix D Figure 1, should not be documented.

2. Multiple Issues

Multiple cross-cutting issues that manifest themselves in different cornerstones or in a number of findings should be first (if applicable)treated as individual issues based on the individual risks determined by the SDP and/or secondly addressed as an aggregate under a common theme without being subject to the SDP. In a separate section of the report, called "Cross-cutting Issues" the inspector should address the causally linked relationships of each of the issues and the potential safety impact of the combined effect within the applicable cross-cutting area. The results of this effect will be considered a "Finding". The issue may or may not be assessed using the SDP process but should be addressed in the Summary of Findings and in the inspection report. Emphasis should be placed on any observed trends or patterns which may be emerging in the different cross-cutting areas. These trends or patterns should be highlighted in the Summary of Findings in support of the assessment process. The issue should then be coded and carried forward in the PIM as "Miscellaneous" for a cornerstone and the significance should be "not applicable". (See Appendix C)

h. Use of Neutral Issues. Neutral issues should not normally be documented unless the issue has generic implications, provides useful information to support a subsequent inspection, or provides insights into areas that directly relate to public health and safety. Positive, neutral and negative issues relating to licensee assessments, corrective action programs or other issues are permitted in the inspection report when reporting on the effectiveness of the licensee's corrective action program based on the annual inspection of that program. This information should be included in the Summary of Findings and entered into the Plant Issues Matrix for the site. A future revision to this manual Chapter will have additional guidance for this inspection.

i. Findings Previously Covered in Licensee Self-Assessments. Issues already covered in licensee self-assessments, unless

there is some problem with the licensee's actions, should not be documented. In some instances, however, the technical significance or generic implications of a licensee identified issue warrant documenting. If the licensee's self-assessment that initially discussed the issue is already on the docket, the inspection report may simply refer to the discussion in the licensee self-assessment. If more detail is needed, or if the licensee self-assessment is not on the docket, the inspector may discuss the issue in the inspection report narrative. In general, discussion of these type of issues in inspection reports should be limited to SDP candidates, significant issues not covered by any SDP, or as part of documenting the annual problem identification and resolution inspection results.

05.03 Level of Detail. Just as inspectors must use judgment in determining what issues are worth including in the inspection report, they must also determine the appropriate level of detail for issues that are included in the inspection report. Some issues should be discussed in more detail than others, based on the safety or regulatory significance, technical complexity, and other factors as follows.

a. Who is the Reader? The principal reader is the person to whom the report cover letter is addressed. For reactor licensees, this is generally the vice president, nuclear, or a similar high-ranking company official. The report should be written, therefore, with a corresponding level of technical detail, so that it will be understood by a knowledgeable individual conversant with nuclear technology, but who may not be an expert in the specific area inspected. Plant-specific design features, relevant procedures, event-specific details, and other factual information should be presented in sufficient detail to allow this person to understand the characteristics and significance of the inspection findings.

The report writer should consider that he or she is also writing for the "record"— The writer should be aware that later readers will be dependent on the level of detail in an inspection report. Certain details can be especially helpful for these readers: knowing the inspection procedure used, the exact component (or system or train) inspected, the component manufacturer (where relevant), the revision number of a referenced licensee procedure, the date, time, and duration of a plant event or transient, and similar details. This awareness—that one is writing for the record—should not be taken as an incentive to write long narrative descriptions, but it should provide motivation for writing precisely.

b. Importance of Overall Conciseness. A key element in ensuring an appropriate level of detail lies in learning to differentiate between information that contributes to understanding the findings and information that detracts or merely adds verbiage.

The report is not intended to be a lengthy discourse of activities carried out so as to justify the time spent or to

demonstrate knowledge of a particular technical area. For any given inspection, if no safety or noncompliance issues were identified, then there is no need to document this inspection except as discussed in Section 06.06.

c. Level of Detail on Inspection Scope. The level of detail here should be concise, but of appropriate detail such that the reader can ascertain what was inspected. In those cases where there are "No Findings", the level of detail in the Scope must be sufficiently detailed to inform the reader of how and what was actually performed, i.e. the methods, and the criteria used during the inspection as appropriate. For example, an appropriate detailed scope for a section which has "No Findings" might be:

EXAMPLE

"The inspectors walked down the accessible portions of the Low Pressure Safety Injection system to verify system operability. That portion inside containment was not accessible. The inspectors verified against the system piping and instrumentation drawings P&ID XXXXX the correct valve positions of all valves in the primary flow path and verified breaker alignments using electrical schematics E-xxx. Instrumentation valve configurations and appropriate meter indications were also observed. Lubrication and cooling of major components were verified by direct observation of the components. Proper installation of hangers and supports were periodically observed during the walk down, and operational status of support systems was verified by direct observation of various parameters. Control room switch positions for the LPSI system were observed and applicable abnormal operating procedures were discussed with operators. Other conditions such as the adequacy of housekeeping; the absence of ignition sources; proper labeling, were also evaluated.

With the exception of minor deficiencies which were brought to the attention of the licensee there were no significant findings."

Detailed descriptions of inspection methods or of "what was inspected" may also be warranted when they are needed to understand or add perspective to the inspection findings, or for certain types of inspection activities such as reviews of emergent issues or complex or involved technical reviews. For example, when the inspector is present during a significant plant event or an unusual plant evolution, more detail may be appropriate concerning which portions of the event or evolution were actually observed. However, when there is substantial documentation regarding an observation in support of a finding, it may not be necessary to provide detail in the Scope, as placing the observation in context may also describe the necessary portions of the scope. In cases where findings are reported the Scope should be more succinct as follows:

"The inspectors verified the equipment alignments for accessible portions of the following ESF systems:

- Emergency Diesel Generator 2
- High Pressure Coolant Injection"

This is the level of detail normally appropriate when additional documentation is provided supporting a finding associated with either of the two subject systems.

d. Level of Detail on Issues and Findings. Once the inspector has decided that an issue is important enough to be included in the report, the same questions used in making that decision (see Sections 05.01.b.2 and 05.02) can assist in determining the appropriate level of detail. The following guidance applies:

1. The degree of actual or potential safety consequence associated with an issue should be a primary consideration in determining the level of appropriate detail. Items of potential significance (issues assessed using the reactor SDP phase 2 or similar issues) generally merit more discussion.

2. Issues that have been analyzed using the SDP and are associated with cross cutting issues, or become findings that could have generic significance—should be discussed in sufficient detail to communicate the cross cutting aspects succinctly and clearly.

3. When the inspector has identified that a particular issue has added significance based on risk, that perspective should be explained. For example, if the inspector finds that two components with reliability problems are related by a dominant event sequence, that relationship should be explained.

4. If documented, "neutral" findings generally should be described in less detail than negative findings. Additional "neutral" details may be warranted when reporting on certain performance indicators or similar information that will be useful in assessing long-term performance or which pertain directly to maintaining public health and safety. Neutral assessments on the adequacy of the licensee's problem identification and resolution activities should be included within the report on the annual inspection of this area.

5. Positive findings should not be documented. However, when describing all the information that was needed to properly perform an SDP evaluation, findings that licensee actions were adequate to mitigate a problem should be supported by the appropriate description of positive licensee performance that influenced the significance of the finding.

6. When documenting an unresolved item, the issue description should provide enough background information that a different inspector, using that information, would be able to perform the follow-up inspection.

7. Cross-cutting issues should be discussed in sufficient detail to support its relationship to a finding in the specific area of performance. If describing the relationship or nexus of a cross-cutting issue to establish a substantive trend or pattern, enough information should be provided so that the reader can reach the same conclusion.

05.04 Documenting Noncompliances. The primary guidance for all matters related to enforcement, including documentation, is in the NRC Enforcement Policy (NUREG-1600), and the NRC Enforcement Manual (NUREG/BR-0195).

The guidance in the Enforcement Policy and Manual applies to issues found or reviewed during inspections that are also violations of regulatory requirements. The focus of the activities delineated below is on determining the significance of the issues and assuring that the licensee has taken actions appropriate for the issue. The significance determination process (SDP) will be used, where applicable, for making the determination of significance. Issues that are not evaluated under the significance determination process will be processed in accordance with the enforcement policy without the added benefit of an assigned risk significance. Such issues are situations with actual safety consequences (such as an overexposure to the public or plant personnel or a substantial release of radioactive material) or are violations related to willfulness or to impeding the regulatory process (such as violations of reporting requirements). (Reference EGM/Enforcement Policy)

a. Specific Enforcement Related Guidance. Issues that are Minor Violations should not be documented but should be discussed with the licensee during the exit meeting following the inspection. (Refer to Appendix D)

1. Violations that are determined to be within the licensee response band (i.e., very low risk significance or green), will be treated as noncited in accordance with the Enforcement Policy. The noncited violation will be documented in the associated inspection report and entered into the Summary of Findings and PIM. The discussion of NCVs should include sufficient information to support the conclusion that the violation was not minor. Issues which have been identified by the licensee, are being tracked within the licensees corrective action program, and are determined by the inspector to be within the licensee's response band (green) should be documented emphasizing the effectiveness of the licensees corrective action program in identifying the issue. At a minimum, for violations other than minor, the report should state:

- what requirement was violated;
- how the violation occurred;
- when the violation occurred, and how long it existed;
- when the violation was identified;
- any actual or potential safety consequence;
- the root cause (if identified);

- all information required to complete the SDP;
- what corrective actions have been taken or planned. [For licensee's with adequate corrective action programs, it is acceptable to only verify that the licensee has entered the issue in its corrective action program for issues that are of very low significance (green)].

2. For issues that are determined to have more than very low risk significance (i.e., white, yellow, or red), if available at the time of documentation, the following should be documented in the inspection report. The information should be written such that another knowledgeable individual could reach the same significance determination.

   - The assumptions used by the inspector or regional SRA in determining the issue's significance must be documented.

   - The significance attributed to the issue by the licensee and, if different than the NRC's significance level, a description of the assumptions the licensee used and considers applicable to its determination that are different from the NRC's.

   - Pertinent accident sequences and mitigating capabilities.

   - Actions the licensee has taken or plans to take to correct the condition and underlying root cause(s), including the appropriate condition reports used to enter the issue into the licensee's corrective action program .

   - The licensee's position on the NRC's determination that a requirement has been violated, if so determined.

   The final significance determination will be documented, the issue entered into the plant issues matrix, and the associated enforcement action will be taken based on the significance. If (a) the issue is green, a noncited violation should be documented in an inspection report, and (b) if the issue is white, yellow, or red, a notice of violation will be issued in accordance with the Enforcement Policy/EGM.

3. Significance to be Determined: Some issues may have a potential significance of greater than "green", for which the risk characterization may not have been finalized at the date of the report issuance. Issues initially categorized as having a potential risk significance of greater than very low significance (Green)" but whose risk significance has not yet been determined should be documented in the report, and the summary of findings. The issue may be documented as an "apparent violation" if a

violation of requirements is associated with the issue, and with a significance of "TBD" in RPS.

Emphasis should be placed on the risk characterization as being potential and not yet finalized. After a final risk characterization is determined by the SDP oversight and enforcement panel and a letter is sent to the licensee regarding this characterization, the PIM should be updated to reflect the final risk characterization and the next subsequent resident inspector inspection report should include a brief description of the issue and the change in risk classification in the summary of findings.

Inspectors must be careful to avoid making direct statements regarding safety significance in the inspection report details outside the SDP analysis or for issues not subject to the SDP. Violation severity levels, as described in the NRC Enforcement Policy, are based on the degree of safety significance involved. In addition, the NRC Enforcement Policy uses the term "safety significance" in a specific sense, which involves consideration of (1) actual safety consequence, (2) potential safety consequence, and (3) regulatory significance (e.g., willfulness or management involvement in a noncompliance, programmatic breakdowns, repetitive violations, etc.). Inspection reports should not refer to a noncompliance as being "of low safety significance".

UNACCEPTABLE: "The issue was determined to be green by the Significance Determination Process,"

The inspector should state why that determination was reached.

ACCEPTABLE: "The issue was determined to be of very low significance by the Significance Determination Process because even though it was degraded the equipment was capable of performing its safety function and trained operators were also available and ready to take appropriate manual actions if needed."

4. Violations of requirements that can not be evaluated with the SDP should be documented in the report section relating to the inspectable area in which the violation was discovered, or in Section 4, Other Activities, if unrelated to a specific inspectable area. The severity level of such violations will be determined using the guidance in the Enforcement Policy and Enforcement Manual.

b. Noncompliances Involving Willfulness. Inspection reports should neither speculate nor reach conclusions about the intent behind a violation, such as whether it was deliberate, willful, or due to careless disregard. The report should include relevant details on the circumstances of the violation without making a conclusion about the possible intent of the violator:

APPROPRIATE: "The radiographer failed to activate his alarming dosimeter, although he had informed the inspectors earlier that he had been properly trained on the use of the device."

INAPPROPRIATE: "The radiographer deliberately failed to activate his alarming dosimeter."

Conclusions about the willfulness of a violation are agency decisions, and are normally not made until after the Office of Investigation (OI) has completed an investigation and a predecisional enforcement conference has been held. A premature or inaccurate discussion of the willfulness of an apparent violation in the inspection report could result in later conflicts based on additional input and review. Inspection reports that include potentially willful violations are to be coordinated with OI and the Office of Enforcement (OE).

05.05 Documenting Issues Not Related to Regulatory Requirements. "Performance-based inspection" is inspection that focuses on issues of safety and reliability, with an emphasis on field observation rather than in-office procedural or record reviews. The emphasis on safety and reliability incorporates probabilistic risk assessment (PRA) and individual plant examination (IPE) insights to structure inspections that focus on systems, components, or activities most important to plant safety. In addition, performance-based inspection tends to focus more on results (e.g., does the pump work?) than on process, procedure or method (e.g., was the pump maintenance procedure well-written?).

In moving toward "performance-based regulation," more recently developed NRC requirements (such as the maintenance rule, 10 CFR 50.65) tend to be less prescriptive about process or method and more focused on results than earlier regulations. For most areas of inspection, the range of relevant regulations, license requirements, industry guidelines, and licensee regulatory commitments is a mixture of performance-based (results-oriented; less prescriptive) and compliance-based (process-oriented; more prescriptive) standards. This mixture often makes it difficult for inspectors/report writers to present and document inspection findings in a consistent manner.

a. Documenting Performance-Based Issues vs. Compliance-Based Issues. The first step in documenting "performance-based" findings is understanding the underlying flow of logic, and differentiating this logic from that of a finding based strictly on compliance. For compliance issues, the clearest manner of presentation is usually comparison/contrast, similar to the format of an NOV.

EXAMPLE: Suppose the inspector finds that a certain surveillance is not being conducted at the required frequency. No performance problems exist with the equipment, and licensee follow-up of the issue determines it to be an isolated area of operator oversight, with no underlying training or procedural

problem. The inspector might present such a finding in the following manner:

"TS ___ states that the ___ instrument channel shall be verified operable by performing CHANNEL CHECK and CALIBRATION operations at ___ frequency. However, from April 7, 20__ until the inspector identified the issue on August 13, 20__, the CHANNEL CHECK and CALIBRATION operations were only performed at a frequency of ___, thus failing to meet the above requirement . . ." followed by a brief summary of the inspector's follow-up actions (if any), the licensee's response, the SDP results, and concluding with statements that disposition the violation.

By contrast, a performance-based finding frequently begins with the field observation that raises a safety or reliability issue (e.g., an equipment problem, a deficient work practice, a questionable system response, etc.), which results in efforts to place the observation in context, understand any associated problems with the underlying processes or methods—all of which may or may not lead to an issue of noncompliance. When documenting such a finding, the clearest presentation usually follows the same path of discovery—that is, the narrative (1) begins with a statement of the observation, (2) places that observation in the context by describing the circumstances or factors that contribute to raising it as an issue and understanding its significance, (3) explains any known root causes or underlying process problems, (4) leads to a "bottom-line" finding that a particular standard was or was not met (if the standard is a requirement, this may be a finding of noncompliance) and (5) provides the necessary information for an SDP determination.

This performance-based approach should be a factor in determining whether an issue is important enough to document, and if so, what level of detail is appropriate. For example, the organization and staffing of a particular licensee group is seldom an appropriate topic from which to build significant findings. Few NRC requirements relate to organization and staffing; and as a stand-alone issue, it rarely merits a detailed discussion in the report.

b. Documenting Issues in Areas Not Covered by Regulatory Requirements. Although the NRC always seeks to focus the requirements of its regulations and licenses on safety considerations, it is possible in the risk informed oversight process that issues may emerge which do not relate specifically to a regulatory requirement. The NRC's safety mandate entails inspection and evaluation of licensee performance issues that may involve areas that are not covered by written requirements. These include only issues which are reviewed for risk significance by SDP because of their affect on a cornerstone or issues not currently addressed by SDP but have potential risk significance.

Issues raised in areas not covered by NRC requirements must still use some standard as a reference point for deciding the

issue. Various inspection procedures give specific criteria for the inspector to use in evaluating a licensee's performance—including some criteria that are not directly related to an NRC requirement, and that might be more correctly characterized as industry convention or standard nuclear safety practices (e.g., Refueling outage activities). When inspection findings are made in these areas the following guidance should be applied.

1. Avoiding Making Recommendations or Creating New Requirements. As the first "rule of thumb" in this area, note that the "standards" discussed here are generally recognized principles of safe operation, and are not written or stated in a manner to resemble concrete requirements. For example, the generally recognized principle of keeping exposures as low as is reasonably achievable (ALARA) justifies writing the following statement,

   ACCEPTABLE: "Licensee conduct of work in radiologically controlled areas did not include in-process controls to minimize radiation exposure."

   It would not be appropriate to prescribe specific in-process controls that constitute recommendations or could be construed to be new requirements:

   UNACCEPTABLE: "Licensee conduct of work in radiologically controlled areas should include remote monitoring cameras or direct job-site supervision by a radiation protection technician."

   Since a focus of the baseline inspection program is to ensure that the licensees are properly managing risk, it is expected that there will be findings where configuration control or similar errors lead to increased risk. Even if no direct NRC requirement exists, these type of findings should be considered for inclusion in inspection reports, based on the threshold of significance of the finding.

   Note also that, when seeking to establish a clear standard of expected performance in areas not covered by NRC requirements, inspectors must be careful never to impose personal preferences or arbitrary opinions on the licensee. Standards of expected performance should be discussed with both NRC and licensee management, and the inspector should promptly bring any licensee disagreements to the attention of NRC management. See also the discussion of backfits under Section 05.05.b.4.

2. Using Standards in Areas not Covered by NRC Requirements. The inspector should attempt, through review of inspection procedures and discussions with NRC and licensee management, to arrive at a clear statement of expected performance. That statement should then be included in the report narrative.

EXAMPLE: The licensee identifies the failure of the "A" containment fan cooler motor inside the containment and decides to troubleshoot the motor during an "at power" entry. The inspector monitors this maintenance activity as part of IP 7111.13 and makes the following observations:

- While waiting to make the containment entry, the inspector notes that the prejob briefing placed little emphasis on the actual work to be performed or the caution statements included in the work package;
- At the job site, the inspector notes that initial communications with the control room were confusing and hard to hear due to in-plant noise;
- As the maintenance workers were about to begin dismantling the motor, the inspector observes that they were going to work on the "B" motor rather than the failed "A" motor, and a quality assurance inspector alerted the workers to this problem;
- Because of these delays, errors, and the resulting additional time and effort, the radiation exposure received was nearly 75 mrem more than planned.

Each of these observations are valid and insightful, yet the inspector the inspector would likely be unable to establish that any requirement has been violated (e.g., since the workers stopped before actually working on the wrong motor, an actual procedural violation and increase in risk from having two containment fan coolers unavailable did not occur). On the other hand, expected standards of performance clearly have not been met and the significance of potentially causing two containment fan coolers to be unavailable would likely meet the threshold of significance for inclusion in an inspection report.

To clarify these standards, the inspector may choose to include in the report narrative a statement such as: "In later discussions with the inspector, the maintenance supervisor stated that prejob briefings for safety-related tasks are expected to ensure that workers understand the exact nature of the work to be performed, including means of identifying the proper components involved." Similar statements might be included regarding clear communications with the control room, job-site verification of correct components, etc. In addition, it would also be appropriate to discuss any potential risk increase that would have occurred if the wrong motor had actually been worked.

Whenever possible, the inspector should seek to tie the finding to a documented program or expectation (e.g., a generic communication on wrong-component or wrong-train events, a licensee's self-checking program, etc.).

3. Addressing the Need for Licensee Corrective Action. Since the standards discussed here may be in areas outside NRC requirements, they may not be used as the basis for

requesting licensee corrective action either orally or in the inspection report. When potentially risk significant issues are involved, a responsible licensee will take corrective actions, and these actions should be documented in the inspection report as appropriate.

If the licensee fails to take proper corrective action for a potentially risk significant matter and the problem recurs or additional risk significant issues result, the licensee may be in noncompliance with 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action." This would result in an additional inspection finding being documented and considered in the assessment process.

Finally, in extreme cases where the licensee refuses to take corrective action for a matter of immediate safety significance, the NRC may exercise its authority to impose an order, even if the licensee has not violated an existing regulation or license condition. Any such situation should result in prompt involvement by NRC senior management (including OE and the Office of General Counsel).

When documenting the licensee's corrective actions regarding a particular issue the inspector should, if possible, document the licensee's corrective action system reference number in the report to help with subsequent reviews of the effectiveness of the corrective action program.

4. Avoiding Inadvertent Backfits. 10 CFR 50.109 establishes specific regulatory authority for the NRC to impose new requirements on reactor licensees involving the addition, elimination, or modification of structures, systems, or components at operating facilities. In order to impose a backfit, the Commission must make a finding that the action will result in substantial additional protection of public health and safety or the common defense and security.

   As discussed in NRC Management Directive 8.4, an NRC staff recommendation that the Commission impose a backfit should only be made after extensive deliberation and evaluation of all associated circumstances. For routine discussions of safety issues in inspection reports, care must be exercised to avoid making an inadvertent recommendation that could be construed as an NRC backfit.

c. Documenting Management Issues. Inspectors should not draw conclusions regarding licensee management effectiveness. NRC requirements related to licensee management are limited, and few inspectors have professional training in evaluating administrative or managerial skills, the appropriate level of staffing for a given licensee task or program, or similar issues.

Inspectors should seek, however, to identify and document findings that will assist NRC management in conducting licensee performance assessments. When discussing specific findings the inspector may identify specific, concrete ways in which staffing changes or management involvement have contributed to that finding.

NON-SPECIFIC: "The continued motor-operated valve deficiencies showed a lack of management support in this area."

SPECIFIC: "The licensee determined that the continued motor-operated valve deficiencies had several apparent causes, including (1) the failure to schedule outage repairs for the valves, (2) the failure to adequately track the repetitive failures, and (3) the lack of follow-up to internal audit findings in this area."

The details given in the second example are much more meaningful.

Finally, when referencing statements made or positions taken by "licensee management," the inspection report should be as specific as possible as to which licensee manager or management area is being referenced (e.g., "the Unit 2 operations manager," "the director of regulatory compliance," or "the engineering manager for plant modifications").

05.06 Treatment of Open Items in Reactor Inspection Reports. Issues that require additional inspection before coming to closure on the issue are identified by a unique tracking number and entered into the IRAM module of RPS by the originating inspector or office. Open items include unresolved items, violations, deviations, non-cited violations, licensee event reports (LERs), and SDP related issues whose significance have yet to be determined.

a. Initiating Open Items. The action of initiating an open item is a commitment of future resources, and should therefore only be used when some specific licensee action is pending, or when needed information is not available at the time of the inspection. When the inspector believes that the additional information may reveal the issue to be a matter of noncompliance, or when the significance of an issue has not been determined, an open item should be initiated. For an unresolved item, the report should identify the actions or additional inspection effort needed to resolve the issue.

Issues of noncompliance (except for minor violations) should always be assigned an IRAM number for tracking purposes. When an inspection involves multiple violations (or multiple examples of a single violation), the inspector should be careful to ensure a one-to-one correspondence between the number of IRAM entries and the number of "contrary to" statements in the accompanying notice of violation. The NRC Enforcement Manual provides additional guidance on tracking and following up issues of noncompliance.

Upon receipt, LERs should automatically be entered into the IRAM system for tracking, screening and potential follow-up.

b. Follow-Up and Closure of Open Items. The level of detail devoted to closing open items depends on the nature and significance of the additional information identified. For example, the closure of an open item should, at a minimum, summarize the topic, summarize the inspector's follow-up actions, evaluate the adequacy of any licensee actions, determine if a violation occurred, and include enough detail to justify closing the issue.

The close-out description of a violation should be correspondingly brief if the licensee's response to the notice of violation already has given an accurate description of the root cause, corrective actions taken, and other aspects of the condition causing the violation, and the inspector identifies no other instances of the violation. Normally NCVs will be opened and closed in the initiating inspection report.

EXAMPLE: "(Closed) Violation 999/98008-03: failure to properly post a high radiation area. The inspector verified the corrective actions described in the licensee's response letter, dated March 28, 19__, to be reasonable and complete. No similar problems were identified."

c. Treatment of Licensee Event Reports. All LERs should be at least screened by an inspector and closed in an inspection report. However, the level of detail provided in the report will vary depending on the significance of the LER and the depth and results of the inspector's follow-up. Less discussion will be required because the LER is already on the docket.

For LERs involving minor issues where no new equipment, system, or human performance problems are identified and the inspector's follow-up does not result in new information, the LER closure should be correspondingly brief. LERs that were addressed by separate NRC letter should also be closed with a brief statement in an inspection report.

EXAMPLE: "(Closed) LER 999/1998-003-00: auxiliary building ventilation actuation. This LER was a minor issue and was closed."

or:

EXAMPLE: "(Closed) LER 999/1998-003-00: auxiliary building ventilation actuation. This LER was addressed in a letter from NRC Region X to Utility on December 15, 2000, and was closed."

Most LERs relate to some aspect of equipment, system, or human performance problems. If these problems have already been discussed and dispositioned separately in another section of the current or a previous inspection report, the LER closure may simply consist of a reference to that discussion:

EXAMPLE: "(Closed) LER 999/1999-002-00: high pressure safety injection isolation. This event was discussed in NRC Inspection Report 50-999/99-01. No new issues were revealed by the LER."

When the LER involves more than a minor issue, and the issue has not been discussed and dispositioned in another section of the current or a previous report, the LER closure should provide, at a minimum, a basic description of the event and a discussion of the safety significance of the event, as determined by the SDP analysis. The discussion should include the licensee's immediate response and subsequent corrective actions, the root cause or causes, a summary of the inspector's follow-up actions, if any, and any required enforcement actions. The discussion should be brief and concise, except in cases where the NRC's information and perspectives differ from the licensee's information and perspectives described in the LER. If the inspector's follow-up does not result in new information or additional perspectives, the report should not uselessly reiterate the detailed event description from the LER.

Note that LERs frequently involve violations of TS or other requirements. As with other report findings, if the LER is discussed in a manner that implies a violation may have occurred (either as part of the event itself or in the underlying root cause), the noncompliance must be clearly identified in the report as a cited violation, a noncited violation, an apparent violation, or a minor violation, as appropriate. Otherwise, a statement should be included that "this event did not constitute a violation of NRC requirements."

d. Avoiding "Implied" Inspection Follow-Up Items.

Other than what is implied in discussing open items the inspection report should not commit to future NRC attention in a particular area. This will be part of inspection planning and the assessment process described in MC 0305.

0610-06 GUIDANCE—INSPECTION REPORT FORMAT

Whenever possible, routine and integrated NRC inspection reports should conform to the standard formats described in this section and illustrated in the attached exhibits. This standardization in format significantly enhances consistency, readability, and information retrieval, which in turn increases efficiency and improves the ability to integrate inspection results. Exceptions include major team inspection reports, augmented inspection team (AIT) reports, supplemental inspections and other cases where the specifically directed focus of the inspection does not easily fit into the baseline inspection process and subtopics given in the standardized report outline.

Additional guidance, including examples, for reports documenting supplemental inspections is in Appendix B. Future revisions to this manual chapter will provide guidance on other reports.

06.01 Cover Letter. Inspection reports are transmitted using a cover letter from the applicable NRC official (branch chief, division director, or regional administrator) to the designated licensee executive. Cover letter content varies somewhat depending on whether or not the inspection identified noncompliances. In general, however, every cover letter uses the same basic structure.

NOTE: Management Directive (MD) 3.57, "Correspondence Management," Part III provides guidance for NRC letters, including inspection report cover letters. In addition, the NRC Enforcement Manual provides standard transmittal letter formats for inspections in which noncompliances are identified.

a. Addresses, Date, and Salutation. At the top of the first page, the cover letter begins with the NRC seal and address, followed by the date on which the report cover letter is signed and the report issued.

For cover letters transmitting reports with issues assigned an escalated action (EA) number, the EA number should be placed in the upper left-hand corner above the principle addressee's name.

The name and title of the principle addressee are placed at least four lines below the letterhead, followed by the licensee's name and address (see Exhibit 2, the sample report). Note that the salutation is placed after the subject line.

b. Subject Line. The subject line of the letter should state the plant name (e.g., "NRC's DIRJAC INSPECTION REPORT) followed by the report number. The words "NOTICE OF VIOLATION" (or "NOTICE OF DEVIATION" etc.) should be included if such a notice is accompanying the inspection report.

c. Introductory Paragraphs. The first two paragraphs of the letter should give a brief introduction, as follows:

EXAMPLE: "On July 24 through August 31, 19__, the NRC completed a safety inspection at your ____ facility. The enclosed report presents the results of that inspection. The results were discussed on [date of exit meeting], with [name of licensee manager].

This inspection was an examination of activities conducted under your license as they relate to [topic of inspection if it is a single topic and can be stated simply. Ex: radiation] safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel.

(Specifically, this inspection focused on the implementation of your radiological effluents and radiological environmental monitoring program.)

The last sentence is not necessary if the inspection covered many areas, such as an integrated inspection report.

d. Body of the Letter. Findings white or above, or those for which an NOV is being considered should be briefly discussed in the order of their significance. The appropriate wording for issues that are also violations of requirements is included in the instructions from the Office of Enforcement.

e. Closing. The final paragraph consists of standard legal language that varies based on whether or not enforcement action is involved. The signature of the appropriate NRC official is followed by the docket number(s), license number(s), and lists of enclosures and distribution.

06.02 Cover Page. The report cover page provides a quick-glance summary of information about the inspection (see Exhibit 2). It contains the dates of inspection, the report number, the names and titles of participating inspectors, and the name and title of the approving NRC manager.

NOTE: A record of inspector and reviewer concurrence in the report is separately recorded and maintained by the issuing office. This concurrence record is not included in the generally distributed version of the report.

06.03 Summary of Findings . The summary should be informative but concise. An ideal inspection report summary will be useful as an overview tool for licensee management and for NRC staff. It also provides the basis for the entries in the PIM. If the inspection did not result in any findings, then a Summary of Findings need not be included in the report.

a. Introduction. The summary should begin with a one- or two-sentence introduction that covers the type of inspection, the scope (i.e., the licensee programs or baseline areas inspected), and any special details.

EXAMPLE: "This integrated inspection report covers a 6-week period of resident inspection, announced inspections by regional engineering and radiation specialist inspectors, and an unannounced visit by a regional safeguards inspector."

b. Presentation of Significant Findings. In keeping with the "Plain Language Initiatives" the most significant major topics identified, including substantial cross-cutting issues, should be discussed first in the cover letter and in the summary of findings in a succinct manner, with an appropriate reference to the section of the report where additional detail is provided. Issues that follow should be listed by cornerstone in the order specified in Section 06.05 . In addition, within each cornerstone, the items should be listed in the order of importance. Findings MUST include the results of the SDP

review; i.e., green, white, yellow, or red. Also, substantial cross-cutting issues that manifest themselves in specific findings should be addressed within the applicable cornerstone area in the Summary of Findings. Similar cross-cutting issues that manifest themselves in different cornerstones or a number of findings within a cornerstone should be addressed in a separate section called "Cross-cutting Issues". Emphasis should be placed on any observed trends or patterns which may be emerging in the different cross-cutting areas.

The Summary of Findings should be compiled by reviewing each report section and writing a crisp, short summary for each issue of note—noncompliances, apparent violations (including the requirement which was violated) and significant findings not associated with a noncompliance. Not all entries in the report details need to be included in the Summary of Findings. The threshold of significance for including an issue in the Summary of Findings should normally be based on whether the issue (1) was evaluated by the SDP, (2) is a significant finding in an area without a current SDP, such as shutdown issues, or (3) is a noncompliance greater than a minor violation which was not evaluated by the SDP. Other substantive findings associated with licensee performance in cross-cutting areas may be included, even if the findings do not meet SDP review criteria as described earlier. In addition, programmatic findings from the annual problem identification and resolution inspection should be included, even if they are positive or neutral.

Minor violations that have extenuating circumstances, if included in the report, should not be included. It is not expected that the summary will be an exact copy of the words in the report details; however, inspectors should ensure that the summary is consistent with the details.

NOTE: URIs should not be discussed in the Summary of Findings if the item could result in an acceptable conclusion. However, URIs may be included when enforcement is still under review, because the identified findings have not been evaluated for significance by the region or the Significance Enforcement Review Panel. Violations and NCVs shall be included in the Summary of Findings.

The usefulness of findings will be increased by concisely stating the root cause (if the root cause has been determined).

c. Plant Issues Matrix. General and specific data entry guidance on the Plant Issues Matrix is contained in Appendix C

06.04 Table of Contents. For reports of significant length (i.e., in which the "Report Details" section exceeds 10 pages), the writer should consider including a table of contents as an aid to clarity.

06.05 Report Details: Use of the Standardized Report Outline. Inspection reports should begin the inspection report with a "Summary of Plant Status". The "Plant Status" should briefly describes pertinent operational issues such as any plant shutdowns or significant changes in power. For specialist inspections, this summary may be eliminated as appropriate (e.g., plant operating status may or may not be relevant to a safeguards or emergency preparedness inspection). The report details should be topically arranged in accordance with the standardized report outline, included as Exhibit 1. This does not mean, that each outline topic should be covered in each report. To the extent that inspection is performed in a particular area (e.g., inspection of "gaseous and liquid effluents"), the resulting findings should be placed in the corresponding standard section of the report (e.g., in 2PS1 of the standardized outline; see Exhibits 1 and 2).

> NOTE: Conformity to the standardized outline should not result in artificially fragmenting an event description or separating report details that would logically be presented together. A number of inspectable area procedures provide insights on several cornerstones. For events the discussion of the entire event shall be included in the most appropriate area. Individual findings, which result in summary of findings entries, will be linked to the most appropriate cornerstone. Regardless of what section the writer finds most appropriate, the basic details need only be presented once.

The sample report included as Exhibit 2 illustrates the effectiveness of this practice. While not all sections of the standardized report outline are covered, the report details are maintained in a coherent, predictable order that corresponds to each cornerstone, and the inspectable area procedure(s) within the cornerstone.

06.06 Report Details: Internal Organization of Specific Sections. Differences in the nature, significance, and complexity of individual findings results in considerable variety in how those findings are organized and presented. However, as shown in the attached sample report (Exhibit 2), the overall organization of each report section should follow the same basic progression of logic: inspectable area, optional title, scope, and findings.

a. Inspection Scope. As discussed earlier, this description should be complete and factual, but concise to aid the reader in putting findings in context. Inspections that have no reportable findings should include within the scope section a list of items or activities inspected in sufficient detail to inform the reader of what was inspected and criteria used for inspection as appropriate. In these cases the following sentence shall be the only entry under Findings; "There were no findings identified during this inspection."

b. Findings. This portion of each report section should be used to present, in a concise narrative format, the inspection results. The first sentence or two of this section should

provide the results of the entire inspection. This should be very brief, and unlike the Summary of Findings does not need to "stand alone," because the following discussion will provide the supporting details.

At this stage in the report, the inspector may choose to simply number issues sequentially, with appropriate subheadings, or may use another method of organizing the findings (see Exhibit 2 for additional guidance on organization methods). This section should provide the information required to make and support an SDP determination of significance. The report should include, as necessary, a statement of the finding(s), including pertinent issues, assumptions made, duration, mitigation, accident scenarios, and worst case safety significance to a cornerstone(s) from any increased risk. When discussing accident scenarios and worst case safety significance, clearly indicate if the condition actually occurred or potentially could have occurred. When a report discusses more than one issue under a particular inspectable area procedure, the most important issue shall be discussed first.

During performance-based inspections, inspectors are going to observe compliance-related issues, which will immediately be recognized to be minor or within the licensee's response band (green), without a formal SDP determination. For these types of issues, inspectors should not collect and report the background information required for a SDP candidate. Instead, inspectors should simply state why the issue is not significant. The issue should then be reported with only enough detail to support the finding(s).

06.07 Exit Meeting Summary. The final section of each reactor inspection report should be a brief summary of the exit meeting. It should also identify the licensee managers who attended the meeting who will also be identified in the first paragraph of the cover letter. This summary normally should include the following elements:

a. Characterization of Licensee Response. In general, the report should not characterize a licensee's exit meeting response as one of wholehearted acceptance of the inspection findings. If the licensee generally agreed with the findings presented, the exit meeting characterization might read as follows:

> EXAMPLE: "The inspectors presented the inspection results to Mr. XXXXX and other members of licensee management at an exit meeting on June 12, 2000. The licensee acknowledged the findings presented."

On the other hand, when the licensee disagrees with the inspectors' finding, this position should be briefly and specifically characterized (e.g., "the plant manager stated that he believed the violation of TS 4.3.1.2, regarding a reactor trip system surveillance, to be of no safety significance"). Specific items discussed elsewhere in the report should not be described in this section in detail.

b. Licensee Oral Statements and Regulatory Commitments. If, at the exit meeting or at any other time during the inspection, the licensee makes an oral statement that it will take a specific action, the report should attempt to accurately characterize that statement. This however is not to be interpreted as a commitment. Should the licensee wish to make a commitment, the commitment should be documented by licensee correspondence after which the inspector should reference the correspondence in the inspection report. Oral statements made or endorsed by a member of licensee management authorized to make commitments are not regulatory commitments unless they are documented by the licensee as such. Inspectors should be careful to not confuse licensee general descriptions of "voluntary enhancements" or general intent or oral statements of the licensee's intent to make a specific regulatory commitment, as a regulatory commitment, i.e., to submit, on the docket, a written commitment to take a specific action).

Because regulatory commitments are a sensitive area, the inspector should also ensure that any reporting of such a licensee documented statement is paraphrased accurately, and contains appropriate reference to the licensee’s document.

c. Absence of Proprietary Information. At the exit meeting, the inspectors should verify whether or not the licensee considers any materials provided to or reviewed by the inspectors to be proprietary.

NOTE: When an inspection is likely to involve proprietary information (i.e., based on the technical area or other considerations of inspection scope), the topic of how to handle such information should be discussed at the entrance meeting.

If the licensee does not identify any material as proprietary, the exit meeting summary should include a sentence to that effect (see Inspection Manual Chapter (IMC) 0611 on actions to take if the report includes proprietary material).

EXAMPLE: "The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified."

d. Subsequent Contacts or Changes in NRC Position. The report writer should briefly discuss any significant contacts between the inspectors and licensee staff or management that occur after the exit meeting (e.g., to discuss new information relevant to an inspection finding). In addition, as discussed earlier, if the NRC's position on an inspection finding changed significantly after the exit meeting, that change should be discussed with the licensee before the report is issued.

06.07 Report Attachments. The attachments discussed below should be included at the end of the inspection report.

a. List of Persons Contacted. The report writer should list, by name and title, those individuals who furnished significant information or were key points of contact during the inspection (except in cases where there is a need to protect the identity of an individual). An exhaustive list is neither required nor desirable; 5 - 10 key individuals normally is sufficient. The alphabetized list should include the most senior licensee manager present at the exit meeting. The list should also include other NRC technical personnel who had significant involvement, if they were not listed as inspectors on the cover page.

b. List of Items Opened, Closed, and Discussed. The report should provide a quick-reference list of items opened and closed, including the item number, the IR code for the item, and a brief phrase (10 words or less) describing the item. Open items that were discussed (but not closed) should also be included in this list, along with the a reference to the sections in the report in which the items were discussed. See the sample list included with Exhibit 2.

c. List of Documents Reviewed. A listing of the documents and records reviewed during an inspection is to be publicly available. Therefore, if a listing is not otherwise made public, the report should include a listing of all the documents and records reviewed during the inspection that are not identified in the body of the report. (Reference IMC 0620)

d. List of Acronyms. Reports of significant length (i.e., in which the report details section exceeds 10 pages) should generally include a list of acronyms as an attachment. For reports in which a relatively small number of acronyms have been used, such a list should be considered optional. In all cases, however, acronyms should be clearly defined when first used in text, regardless of whether a list of acronyms follows the report narrative.

06.09 RELEASE AND DISCLOSURE OF INSPECTION REPORTS AND ASSOCIATED DOCUMENTS

a. General Public Disclosure and Exemptions. Except for report enclosures containing exempt information, all final inspection reports will be routinely disclosed to the public. IMC 0611, "Review and Distribution of Inspection Reports," describes the various types of exempt information. IMC 0620, "Inspection Documents and Records," provides guidance on acquisition and control of NRC records, including inspection-related documents.

b. Release of Investigation-Related Information. When an inspector accompanies an investigator on an investigation, the inspector shall not release either the investigation report nor his or her individual input on the investigation report. This information is exempt from disclosure as provided by 10 CFR 9.5, subject to determination by OI. OI reports of

investigations, while in preparation or review, will not be circulated outside NRC without specific approval of the Chairman (OI Policy Statement 23).

Generally, NRC technical and safety concerns can be communicated to a licensee without revealing that an investigation is contemplated or underway. However, when information cannot be released without risk of compromising an investigation, the regional administrator (RA) will inform the Director, 0I, in advance that safety concerns require releasing to the licensee information related to an open investigation. The Director, 0I, will review the information to be released and advise the RA of the anticipated effect on the course of the investigation.

The RA will release the information only after determining that the safety concerns are significant enough to justify the risk of compromising the pending investigation and any potential sequent regulatory action. Conversely, when the RA decides, after consultation with 0I, to delay informing the licensee of an issue, the RA should document this decision, including the basis of determining that the delay is consistent with public health and safety considerations. Any such decision should be reexamined every three months to assure its continuing validity (see March 2, 1987 memorandum from the Executive Director for Operations (EDO) to office directors and regional administrators).

When an emergency or significant safety or security issue appears to require immediate action, NRC employees, at their discretion, may discuss with, show to, or provide the licensee any pertinent material they believe the circumstances warrant. If time permits, regional management should be consulted first.

An emergency situation meeting this criteria is one in which, in the opinion of the senior NRC employee cognizant of the situation, a present danger to public health or safety or to the common defense and security requires the release of investigative information to a licensee without the delay necessary to consult with appropriate OI personnel (see March 2, 1987 memorandum from EDO to office directors and regional administrators).

If an issue disclosed during an inspection is to be referred to OI for possible investigative action, the inspection report should not contain information that would lead a reader to conclude or infer that an investigation may be opened. In this case, the report should contain only relevant factual information collected during the inspection. The referral to OI should be made by separate correspondence, with any additional information needed to support the referral.

END

EXHIBITS:

Exhibit 1: Standard Reactor Inspection Report Outline

Exhibit 2: Sample Reactor Inspection Report

APPENDICES:

Appendix A: List of Acronyms Used in this Inspection Manual Chapter

Appendix B: Documentation Guidance for Supplemental Inspections |

Appendix C: Detailed Guidance for the Plant Issues Matrix |

Appendix D: Guidance for Classifying Violations as Minor Violations |

Appendix E: Thresholds for Documentation |

Cover Letter
Cover Page
Summary of Findings
Table of Contents (optional)

Report Details:

1 REACTOR SAFETY

Initiating Events/Mitigating Systems/Barrier Integrity [REACTOR - R]

Note: The baseline inspection procedure number is provided here as a convenience. It may be added to the headings in inspection reports at the option of the region.

[Number	Topic	Baseline Procedure]
R01	Adverse Weather	71111.01
R02	Evaluation of Changes, Tests or Experiments	71111.02
R03	[R03 Reserved]	
R04	Equipment Alignments	71111.04
R05	Fire Protection	71111.05
R06	Flood Protection Measures	71111.06
R07	Heat Sink Performance	71111.07
R08	Inservice Inspection Activities	71111.08
R09	[R09 Reserved]	
R10	[R10 Reserved]	
R11	Licensed Operator Requalification	71111.11
R12	Maintenance Rule Implementation	71111.12
R13	Maintenance Risk Assessment and Emergent Work Evaluation	71111.13
R14	Personnel Performance During Non-routine Plant Evolutions	71111.14
R15	Operability Evaluations	71111.15
R16	Operator Work-Arounds	71111.16
R17	Permanent Plant Modifications	71111.17
	[R18 Reserved]	
R19	Post Maintenance Testing	71111.19
R20	Refueling and Outage Activities	71111.20
R21	Safety System Design and Performance Capability	71111.21
R22	Surveillance Testing	71111.22
R23	Temporary Plant Modifications	71111.23
Emergency Preparedness [EP]		
EP1	Exercise Evaluation	71114.01
EP2	Alert Notification System Testing	71114.02

EP3	Emergency Response Organization Augmentation Testing	71114.03
EP4	Emergency Action Level and Emergency Plan Changes	71114.04
EP5	Correction of Emergency Preparedness Weaknesses and Deficiencies	71114.05
EP6	Drill Evaluation	71114.06

2. RADIATION SAFETY

Occupational Radiation Safety [OS]

OS1	Access Control to Radiological Significant Areas	71121.01
OS2	ALARA Planning and Controls	71121.02
OS3	Radiation Monitoring Instrumentation	71121.03

Public Radiation Safety [PS]

PS1	Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems	71122.01
PS2	Radioactive Material Processing and Transportation	71122.02
PS3	Radiological Environmental Monitoring Program	71122.03

3. SAFEGUARDS

Physical Protection [PP]

PP1	Access Authorization	71130.01
PP2	Access Control	71130.02
PP3	Response to Contingency Events	71130.03
PP4	Security Plan Changes	71130.04

4. OTHER ACTIVITIES [OA]

OA1	Performance Indicator Verification	71151
OA2	Identification and Resolution of Problems	71152
OA3	Event Follow-up	71153
OA4	Cross-cutting Issues	
OA5	Other	
OA6	Meetings, including Exit	

NOTE: Any findings related to the performance indicator (PI) verification baseline inspection shall be included under Other, 4OA1. In addition, findings associated with identification and resolution of problems, cross-cutting issues, or event follow-up shall be included in the Other Activity Section of the report. [PIM findings will still require assessment as to which Cornerstone(s) the finding applies.] Results of nonbaseline inspections may also be included under the "other" category. However, to protect the identification of allegation-initiated issues, inspectors should try and include allegation follow-up discussions in the appropriate areas of sections 1 through 3 of the report. LERs which are determined to be minor can be closed under Other, 4OA5.

NOTE: the inspection report that follows is based on a fictional reactor licensee and a fictional inspection. The report contains realistic issues; however, any resemblance to an existing facility or actual events is coincidental.

This exhibit may be used as a sample or model report for matters of format and style. It illustrates how to use the standardized inspection report outline, and adheres to the expected internal organization for each report section (as discussed in IMC 0610).

The sample report assumes that the SDP has been issued and is available for use in at least some of the cornerstones. Therefore, the sample report does not include detailed descriptions of the how the SDP works but simply refers directly to already issued SDP tables and guidance. To the extent that any SDP is used that has not been formally issued on the docket, then that particular SDP and detailed supporting discussions will have to be included in the report.

The sample report discusses two issues which require an operating reactor SDP Phase 2 screening. One of these examples is divided into subheadings and contains a Summary section within the body of the report. The other SDP example does not contain many subheadings. Inspectors may choose either method. Use of subheadings is recommended for longer discussions. If used, the Summary should closely parallel the information in the Summary of Findings

In several ways, however, it departs from expected practice:

1. This report illustrates various methods of report organization that would be appropriate to various types of inspections (e.g., events, corrective action reviews, observations of work). Technical issues discussed are drawn from both BWR and PWR technology.

2. In terms of report content, the sample report illustrates the use of "issues and findings," "thresholds of significance," varying levels of detail, and other concepts described in IMC 0610. However, the content included in this report should not be used as a "standard" in the sense of how individual findings are treated (i.e., the fact that a particular event is described in a particular way in the sample report does not dictate that all similar events be given a similar level of detail in other reports). As discussed elsewhere, judgments about inspection report content must be made based on the circumstances of an individual inspection, and will therefore vary.

3. Pages are numbered continuously through this exhibit. Inspection reports should use separate page numbering for the cover letter, summary of findings, and report details.

2. The report contains an issue which is determined to be within the increased regulator response band. This discussion is longer than what would be expected for report sections which discuss issues within the licensee response band.

August 14, 1999

Ms. Joan A. Doe, Vice President, Nuclear
Greckenshire Power & Light
721Y Brick Road
Stone Towers, WF 44632

SUBJECT: NRC'S DIROJAC REPORT 50-998/99-07, 50-999/99-07

Dear Ms. Doe:

On July 24, 1999, the NRC completed an inspection at your Dirojac 1 & 2 reactor facilities. The enclosed report presents the results of that inspection. The results of this inspection were discussed on July 24, 1999, with Mr. D. Prue and other members of your staff.

This inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, one potentially safety significant issue was identified with an apparent violation of your technical specifications dealing with emergency core cooling systems. Although the systems have been returned to service and the condition of concern no longer exists, the NRC will presently inform you of its final determination of the significance of the condition and any associated enforcement action.

The NRC also identified five additional issues that were evaluated under the risk significance determination process and were determined to be of very low safety significance (Green). These issues have been entered into your corrective action program and are discussed in the summary of findings and in the body of the attached inspection report. Of the five issues, three were determined to involve violations of NRC requirements, but because of their very low safety significance the violations are not cited. If you contest these noncited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with a copies to the Regional Administrator, Region ___; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Dirojac facility.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be placed in the NRC Public Document Room.

Sincerely,

Samuel A. Johnson, Director
Division of Reactor Projects

Docket Nos.: 50-998, 50-999
License Nos: XXX-77, XXX-79

Enclosure(s):
Inspection Report 50-998/99-07, 50-999/99-07

cc w/ encl: L. Collinsworth, Compliance Manager
R. Littlestaf, General Manager, Technical Services
J. Bradwood, Plant General Manager
F. Buckfuller, General Counsel
D. Soapstone, Operations Manager

U.S. NUCLEAR REGULATORY COMMISSION

REGION X

Docket Nos: 50-998, 50-999
License Nos: XXX-77, XXX-79

Report No: 50-998/99-07, 50-999/99-07

Licensee: Greckenshire Power & Light (GP&L)

Facility: Dirojac Generating Station, Units 1 & 2

Location: 11555 Granite Blvd.
Stone Towers, WF 44632

Dates: June 11 - July 24, 1999

Inspectors: A. Rand, Senior Resident Inspector
M. Heidegger, Resident Inspector
J. Locke, Senior Radiation Specialist
P. Sappho, Reactor Projects Inspector

Approved by: E. Tudor, Chief, Projects Branch 2
Division of Reactor Projects

SUMMARY OF FINDINGS

Dirojac Generating Station, Units 1 & 2
NRC Inspection Report 50-998/99-07, 50-999/99-07

The report covers a 6-week period of resident inspection and announced inspections by a regional radiation specialist and a regional projects inspector. The significance of issues is indicated by their color (green, white, yellow, red) and was determined by the Significance Determination Process in Inspection Manual Chapter 0609.

Cornerstone: Initiating Events

- Green. The inspectors identified a noncited violation for failure to insure nondestructive examination contract inspectors were qualified. The inspector performing the core shroud inspections was not qualified. A different inspector reperformed the core shroud inspection and did not identify any weld cracks (Section 1R07).

- Green. During plant startup operators failed to initiate emergency feedwater, resulting in an uncomplicated unit trip. All mitigation system remained operable and barrier integrity was not challenged. The inspectors identified a noncited violation for inadequate procedures (Section 1R14.2).

Cornerstone: Mitigating Systems

- White. The inspectors identified an apparent violation of Technical Specification Limiting Conditions for Operation 3.5.2 in Unit 2 as a result of both trains of the emergency core cooling system being unavailable for approximately 75 hours and Train A being unavailable for approximately 18 days during power operations. The simultaneous unavailability of both trains resulted in the total loss of a mitigation function necessary to prevent core damage in the event of a loss of coolant accident (LOCA). NRC Staff calculations indicated an increase of 1.7E-5 in core damage probability. Based on Tables 1 and 2 of the Significance Determination Process the NRC staff determined that the screening for a small break LOCA was within the increased regulatory response band (white); low frequency and medium likelihood (E) with recovery of one train. The screening for a medium break LOCA was also within the increased regulatory response band; lower frequency and medium likelihood (F) with no mitigation (Section 1R14.1).

- Green. Three of four sources of cooling for the coolant charging pumps (CCPs) were unavailable for 36 hours because of poor work planning. Cooling to the CCPs was provided by two trains of component cooling water (CCW), with a backup supply from two nonsafety-related service

water pumps (SWPs). The SWPs were unavailable for two weeks. During this time, one train of CCW was taken out of service for heat exchanger cleaning. The staff determined that the highest contribution to core damage probability (CDP) from loss of the operating CCW train was loss of cooling to the CCPs, followed by loss of reactor cooling pump seal cooling and subsequent seal failure. The NRC staff calculated that the increase in CDP was small. In addition, the licensee later determined that operators could have restored the second train of CCW within the time calculated for seal failure. The inspectors considered that the licensee's evaluation was acceptable. Based on Tables 1 and 2 of the significance determination process the NRC staff determined that even without credit for CCW restoration this issue was within the licensee's response band (green); medium likelihood and low exposure time (E) with two trains of intermediate head safety injection pumps for mitigation (Section 1R04).

- Green. The inspectors identified that the licensee's in-progress corrective actions for failure of a drywell fan did not include resolution of the subsequent increase in drywell temperatures above Final Safety Analysis Report limits for drywell snubbers. The licensee subsequently determined that the snubbers were always functional, but that their qualification life was reduced by one year (1R03).

- Green. The inspectors identified a noncited violation in which a Unit 1 control rod was returned to service following maintenance without a required retest. The subsequent retest was satisfactory (Section 1R19.1).

Cornerstone: Occupational Radiation Safety

- Green. Radiation protection technicians failed to remove all the tools and other material with low levels of radioactive contamination prior to release of a trailer as a temporary radiological protected area. The licensee had recently identified two similar release problems on radiological problem reports (Section 2OS4).

Cross-cutting Issues: Human Performance

- NO COLOR. Inspectors found that errors in review, coordination, and implementation of maintenance activities during or near Unit 2 refueling outage number 12 (January and February 1998) led to inoperable safety systems. Operators were unaware that Technical Specification or administrative limiting condition for operation action statements were entered or exceeded. Required nuclear instruments and emergency diesel generators were not operable during some fuel moves (Sections 1R04.2 and 1R20.4), automatic depressurization

system valves were taken out of service while required (Section 1R20.2), and the high pressure coolant injection system was inoperable due to incomplete maintenance (Section 1R19.1). Other events included technician errors in which electrical jumpers were installed in incorrect locations for logic used by the reactor protective system and by the emergency core cooling system. While the risk of the individual events was very low, an increase in maintenance activity problems was evident (Section 1R20.5).

Summary of Plant Status: The plant was at 100 percent power throughout the inspection period except for two days following an uncomplicated trip.

1. **REACTOR SAFETY**
Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R03 Emergent Work

a. Inspection Scope

The inspectors reviewed the licensee's actions to resolve failure of Unit 1 Drywell Fan D1.

b. Issues and Findings

The inspectors identified that the licensee's in-progress corrective actions for failure of a drywell fan did not include resolution of the subsequent increase in drywell temperatures above final safety analysis report (FSAR) limits for drywell snubbers. The licensee subsequently determined that the snubbers were always functional, but that their qualification life was reduced by one year.

On June 4, 1999, with Unit 1 at full power, Drywell Fan D1 tripped. Drywell temperatures rose to approximately 230 °F and stabilized. The inspectors determined that the other drywell fan was operating and observed that the licensee immediately suspended any work which could have affected the operating fan. The licensee determined that a secondary contact in the circuit breaker for Fan D1 had failed. On June 8, the licensee replaced the contact, completed a postmaintenance test (PMT) and restored Fan D-1 to service. Drywell temperatures stabilized at 180 °F.

The inspectors reviewed the licensee's work packages associated with Fan D1 failure, which were still open for required shift supervisor and quality assurance reviews, and observed that the licensee had not identified that the drywell temperature had exceeded the FSAR limit of 200 °F for drywell snubbers.

The inspectors discussed the drywell temperatures with a shift supervisor, who issued a corrective action request to document and resolve exceeding the FSAR design temperature. In later discussions, the licensee's Quality Assurance manager stated that he considered his staff would have identified the FSAR temperature problem, because the checklist for quality assurance review of completed work packages included a check for compliance with the FSAR. Because the work package was still open, the inspectors considered that no violation of NRC requirements had occurred.

The licensee determined that the increased temperature did not affect the functionality of the snubbers, but did reduce their qualification life from six years to five years. After discussions with an NRC senior reactor analyst (SRA), the inspectors considered that the loss of the fan and increased drywell temperature did not significantly increase the risk of containment failure in response to any initiating events. Therefore, since the snubbers remained functional, this issue was determined to be within the licensee's response band (green).

1R04 Equipment Alignment

.1 One Cooling Water Source for the CCPs

a. Inspection Scope

During plant status review, the inspector learned that three SWPs were unavailable. After review of the impact of this information, the inspectors checked equipment alignments within the component cooling water system.

b. Issues and Findings

Brief Overview

Three of four sources for cooling for the CCPs were unavailable for 36 hours because of poor work planning. Subsequent NRC and licensee review determined that the issue was within the licensee's response band based on both adequate mitigation and cooling system restoration.

Discussion

Individual status of the SWPs was as follows:

- A - in service, supplying service water needs
- B - valved out of service because of a leaking check valve
- C - out of service because of high vibration
- D - out of service because of impeller failure and oil seal replacement

Pumps B, C, and D had each been out of service for approximately 2 weeks.

The service water system is common and is not safety-related. Pumps A, B, and C are motor driven; pump D is diesel driven. The system provides water for auxiliary cooling, drinking, sanitary use, and building services.

In addition, SWPs B and D had a safety-related function which the licensee designated as safety significant in the

maintenance rule program; these SWPs could be aligned to provide cooling for the CCPs. Either of two trains of CCW provided normal cooling to the CCPs.

The inspectors reviewed the licensee's control room logs, walked down the CCW portion of the main control board, and inspected the alignment of a portion of components in CCW train A. Based on this inspection, the inspectors determined that both trains of CCW were currently available.

The inspectors reviewed the control room logs for the past two weeks and found that CCW train A was available during the entire time. However, CCW train B was unavailable for 36 hours because the associated CCW heat exchanger primary side was opened for cleaning of macro-fouling. During this 36 hour period, only one source of cooling was available for cooling the CCPs.

The inspectors and an NRC SRA reviewed the licensees Individual Plant Examination (IPE) and determined that the highest contribution to CDP from loss of the operating CCW train was subsequent loss of the CCPs and potential reactor coolant pump seal failure. The IPE indicated that reactor coolant pump seal failure would lead to a LOCA in about 90 minutes. The IPE showed that this scenario represents 12 percent of the total CDP or 4.6E-5. The SRA calculated that with only one train of cooling available to the CCPs for 36 hours, the average CDF was 8.8E-4/year. With all four CCP cooling sources available during the 36 hours, the average CDF would have been 1.6E-6/year. This represented an increase of 8.8E-4/year for the 36 hours, or an increase in CDP of 3.6E-6. The SRA determined that the loss of redundancy for cooling the CCPs contributed to increased risk for both a reactor coolant pump seal failure (initiating event) and loss of high pressure safety injection for small break LOCAs (mitigating system failure).

The inspectors and SRA screened this finding using the SDP. During the Phase 1 screening the inspectors determined that a Phase 2 screening was required for this issue because it could affect the reactor coolant system barrier function. In conjunction with the SRA, the inspectors initiated a phase 2 screening. During this screening the SRA noted that the CDP for loss of CCW for accident scenarios other than loss of the charging pumps was not affected by unavailability of the SWPs.

SDP Step 2.2 discusses use of Table 1 for findings which relate to an increased likelihood of a specific initiating event and notes that the sample frequency of initiating events should be changed accordingly. For this issue the SRA determined that even though there was an increase in the frequency for an initiating event, the specific CDF calculations indicated that Table 1 should be used without change. The inspectors determined that the "Estimated Likelihood Rating," was an F based on a frequency of initiating event of 1 per 100 to 1000 and a "Exposure Time for Degraded Conditions," of less than three days. Referring to

SDP Table 2, the inspectors determined that the mitigation capability was two redundant trains. Although the CCPs were not available, both trains of medium head safety injection pumps were available, and along with operator action to partially depressurize the system, were credited for mitigation, which for a likelihood of F indicated that the issues was within the licensee's response band (green).

The inspectors discussed the observation that three of four methods of cooling the CCPs had not been available for 36 hours with the licensee. The licensee initiated a nonconformance report to investigate the issue, perform a separate risk analysis, and determine potential mitigation.

The licensee determined that maintenance personnel could have restored the CCW heat exchanger within 90 minutes prior to seal damage. Based on recovery of the second CCW train, the licensee calculated that the change in the CDF for both SWPs B and D being unavailable for 2 weeks was negligible.

The inspectors reviewed the licensee's analysis that CCW Train B could have been restored within 90 minutes. The inspectors considered that this analysis was adequate; operator mitigation could be credited for restoration of one CCW train before a seal LOCA would have occurred.

The licensee informed the inspectors that the preliminary root cause for this finding was failure to adequately incorporate the unavailability of SWPs B and D into operating, configuration management, and risk management procedures. Licensee planned actions included:

- Updating operating procedures (complete) and configuration management procedure (scheduled to by completed within a month of June 1999);
- Briefing all operating crews on this issue;
- Expediting returning the unavailable SWP to a functional status, and not allowing optional maintenance to be performed on the CCW system until SWP B or D was available;
- Conducting probabilistic risk assessment-related training for selected maintenance and engineering personnel, including training on the risk significance of service water;
- Reviewing the risk scenarios involving service water to identify additional operator actions that could reduce significance; and
- Updating risk management procedures accordingly.

.2 <u>Emergency Diesel Generator Ventilation Power Supply Switch Out of Position</u>

a. Inspection Scope

The inspectors reviewed the prompt investigation results associated with Problem Identification Form D2000-00441, the associated root cause report, and the event notification work sheets. The inspectors also reviewed the design requirements, reportability guidelines, and Technical Specifications.

b. Issues and Findings

On January 2, 1998, with Unit 1 operating at full power and with Unit 2 in Mode 5 handling irradiated fuel in secondary containment, an equipment operator identified that the Unit 2 emergency diesel generator room ventilation power select switch was selected to the Unit 1 source of power and not to the normal Unit 2 source. Operators considered the Unit 2 emergency diesel generator to be inoperable until the switch was moved back to its normal position. After identifying the switch was out of position, the licensee started the ventilation fan from its alternate source to verify that the fan would operate properly. The switch was then returned to the normal position. A licensee investigation could not determine the exact cause of the mis-positioned switch, or when the switch was placed in the wrong position. The licensee initiated an emergency notification to the NRC, then later retracted the call after determining that operators could have repositioned the switch to make the emergency diesel generator available if needed.

Previously, the shared emergency diesel generator was considered to be inoperable to Unit 2 (but operable to Unit 1) due to work on Unit 2 electrical switchgear. These conditions resulted in no operable emergency diesel generators for Unit 2 for an unknown time with irradiated fuel being handled in secondary containment. This was considered to be a violation of Technical Specification 3.9.B.2. However, this violation is considered a Non-cited Violation (50-XXX/00001-01), consistent with the Interim

Enforcement Policy for pilot plants. This violation is in the licensee's corrective action program as Problem Identification Form D2000-00441.

Risk Significance

The inspectors used the Significance Determination Process to evaluate the risk significance of this event had there been a loss of offsite power initiating event. The inspectors assumed that the Unit 2 emergency diesel generator room ventilation fan switch being out of position was not an actual loss of a safety function and that the fan was available during this postulated event. The inspectors determined that the Unit 1 diesel generator would not have been overloaded by the Unit 2 emergency diesel generator room ventilation fan. In addition, the station blackout diesel generators were also available.

For the operating unit, this event resulted in being screened out in a Phase 1 Significance Determination Process since the Unit 1 equipment was considered operable. Since a shutdown Significance Determination Process was not currently available, the regional senior reactor analyst assisted the inspectors in determining the impact on the shutdown unit. This issue was determined to be of very low safety significance as the emergency diesel was still available to support the shutdown unit (Green). Licensee Event Report 50-XXX/00002-00 was issued to report this event.

1R06 Flood Protection

a. Inspection Scope

The inspectors conducted a walkdown inspection of the reactor auxiliary building and the service water tunnel and examined the LHSI and HHSI systems to verify that the equipment was not subjected to damage resulting from internal flooding (e.g. from pipe breaks). The inspectors reviewed the internal flooding analysis design calculations performed to demonstrate that the safety related equipment in the reactor auxiliary building was not vulnerable internal flooding and also reviewed the design basis for the plant site to verify that the reactor auxiliary building and service water tunnel were not vulnerable to external flooding events. The following documents/calculations were used as criteria for this inspection:

PRA/FE-4 RAB Unit 1 Compartment Flood Analysis Elev.436
PRA/FE-5 RAB Unit 1 Compartment Flood Analysis Elev.222
PRA/FE-6 RAB Unit 1 Compartment Flood Analysis Elev.259
PRA/FE-7 RAB Unit 1 Flood Analysis for Elev. 123 & 210
UFSAR Section 15, Accident Analysis

b. Issues and Findings

There were no findings identified and documented during this inspection

1R07 Inservice Inspection

Qualification of Inspectors

a. Inspection Scope

The inspectors reviewed the ultrasonic testing of core shroud vertical welds by contractor nondestructive examination (NDE) personnel.

b. Issues and Findings

The inspectors identified a noncited violation for use of an unqualified contract inspector during performance of core shroud inspections. Reinspection by qualified personnel did not identify any weld cracks.

On July 14, 1999, the inspectors, incidental to weld inspection review, identified that the licensee did not have qualification documents for a contractor Level II NDE inspector performing the core shroud inspections. In addition, the inspectors could find no evidence that the licensee had reviewed the NDE inspector's qualifications.

The inspectors discussed several requirements with the engineering supervisor in charge of the NDE work. ANSI N45.2.6-1978 required that records of personnel qualifications be maintained by the employer. The Dirojac Quality Assurance Manual required the designated technical services engineer to obtain qualified contractors for in-service inspections, and to review NDE personnel qualifications before beginning work. Dirojac Quality Assurance Procedure (DQAP) 320-3, "NDE," Revision 14, required completing a certification checklist before beginning work. Dirojac Test Procedure (DTP) 110-6, "Use of Contractors for NDE," Revision 6, Step 5.2, required preparing a qualification review sheet for each contractor NDE employee.

The engineering supervisor was unaware of whether the necessary certification reviews had been performed. Additional licensee evaluation determined that the certification review, checklist, and qualification review sheet had not been completed for any contract NDE inspectors. The licensee stopped the core shroud inspection and determined that the qualifications for the inspector in question had expired. After completing the required certification reviews, the licensee repeated the core shroud inspections using a different inspector.

No functional problems were identified by the re-inspection, therefore, the issue did not meet the initial SDP screening, and is considered to be green. The licensee entered the problem into its corrective action system and determined that the inspector in question had not performed any other inspections at the site. In addition, the licensee determined

that all other contract NDE personnel had valid qualifications.

TS 6.2.a requires that written procedures be established, implemented, and maintained covering activities recommended in Regulatory Guide 1.33, Revision. 2, Appendix B. TS 6.2.a applies to Procedure DQAP 20-3, Procedure DTP 110-6, and the Dirojac Quality Assurance Manual. Failure to perform the required qualification and certification reviews before beginning core shroud ultrasonic testing is a violation of TS 6.2.a which is being treated as a noncited violation, [Specific guidance for wording of baseline inspection program NCVs is being developed and will be incorporated into this sample cover letter when it is issued] (NCV 999/99007-01).

1R09 Inservice Testing

(Open) Unresolved Item 998; 999/98015-06: diesel generator cooling water (DGCW) issues. Two issues had been identified: (1) the DGCW systems for both Units 1 and 2 were in unbalanced flow configurations, such that flow distribution to individual coolers could not be determined with precision; and (2) the licensee's system flow test did not demonstrate whether the DGCW pump could meet the demands of the diesel generator heat exchanger and the Unit 1 ECCS pump room coolers.

Regarding Item (1), because of silt accumulation both DGCW systems remain in unbalanced flow configurations. Using existing flow and temperature measurements, Engineering was able to demonstrate (using worst-case assumptions) that sufficient flow existed in each system to maintain system operability. However, to improve flow characteristics and the accuracy of flow distribution measurements, the licensee intended to remove silt accumulation by hydrolazing the Unit 2 DGCW piping during the upcoming Unit 2 outage. After hydrolazing, the licensee planned to retest the flows to the diesel generator and ECCS room coolers to verify sufficient flow. Flow balancing of individual coolers was not currently planned. Although Engineering Calculation XX appeared to demonstrate that adequate flow existed, this item will remain open pending licensee testing, and subsequent completion of an SDP analysis based on actual data to properly characterize the risk associated with this item and any enforcement based on this risk determination.

Regarding Item (2), the licensee had added an additional test configuration to Dirojac Surveillance Test DST 640-8, "Quarterly DGCW to Unit 1 and Unit 2 ECCS Room Coolers Flow Test," Revision 2, to verify that the DGCW pump could meet necessary flow demands. On May 23, 1999, the licensee's completion of the flow test using the revised procedure successfully demonstrated the capability of the DGCW pump in meeting the flow demands specified above. This portion of the unresolved item is closed.

This item will remain open pending resolution of Item (1).

1R14 Non-routine Plant Evolutions

1. ECCS Trains

a. Inspection Scope

During the Unit 2 outage, the licensee determined that the line starter for a Train A sump recirculation valve had failed. The inspectors reviewed the circumstances surrounding this failure and the availability of alternate mitigation capabilities.

b. Issues and Findings

Brief Overview

The inspectors determined that both trains of the ECCS had been unavailable for 75 hours because of equipment failure and planned maintenance which was an apparent violation of TS requirements. The NRC staff determined that this issue was within the increased regulatory response band based on medium and small break LOCA exposure times and lack of mitigation.

Background

At Dirojac, many motor-operated valves are controlled by line starters that direct power to the valve actuators in the opening or closing direction. The control power breaker normally remains closed and the line starter opening and closing coils are de-energized. To prevent power from being directed to the motor actuator in both directions simultaneously, the line starters are equipped with redundant mechanical and electrical interlocks.

On February 5, 1999, while replacing an old line starter for the Unit 2, Train A containment emergency sump outlet valve (2VAL84), the licensee discovered that the mechanical interlock was stuck in the closed position. It should have been in the neutral position. In the closed position, the interlock would have prevented the valve from electrically opening. The valve had last been operated (closed) on January 6, 1999. The licensee documented the deficiency in Nonconformance Report 990500. Unit 2 was shutdown for an outage on January 24, 1999.

Problem Assessment

On February 6, 1999, the licensee determined that an abrasive foreign material (grit) had worked its way into the space between a metal post and a sliding nylon ring, causing the ring to stick. The licensee also confirmed that the sticking was not being caused by another known failure mechanism (a generic problem from 1998, documented in Root Cause Evaluation 98-18, that was the reason that all of that style line starters were being replaced). A formal root cause investigation was initiated.

The licensee established that the grit was not present on any of the newer line starters. The licensee then inspected all the remaining old line starters in Units 1 and 2 and determined that all the starters were in the required neutral position. Based on this inspection, the licensee considered that the remaining old line starters were operable (available). The licensee accelerated replacement of the old line starters.

The licensee reviewed the past history of the availability for the line starters, and did not identify any failures related to grit. The inspectors reviewed the maintenance history for selected line starters and did not identify any previous failures. The inspectors considered the failure to be isolated.

Risk Determination

The inspectors reviewed this issue with the assistance of an NRC SRA. The stuck interlock mechanism on the Valve 2VAL84 line starter would have prevented the valve from opening on demand during a LOCA upon receipt of a recirculation actuation signal (RAS). This would prevent Train A of the ECCS from functioning. The licensee's IPE indicated that RAS was required to prevent core damage in all but the smallest (< 3/8-inch diameter) LOCAs. Without successful initiation of RAS, the licensee determined that core uncovery would occur in 15-30 minutes, and that core damage would occur in another 15-30 minutes.

During the time that the Train A ECCS was inoperable, the Train B ECCS was also inoperable for planned activities on two occasions, as described below.

- CCW Train B heat exchanger was inoperable for approximately 60 hours for repairs to leaking tubes on January 11-14, 1999. The licensee estimated that recovery time from this condition would be 2-4 hours, including reinstallation of the mechanical components and venting the system. The CCW heat exchanger was required to cool the high pressure safety injection (HPSI) pumps and motors. The licensee determined, through its pump vendor, that the pump was designed to operate for up to 2 hours under accident conditions without cooling water. After that, HPSI unavailability would prevent the successful function of RAS on Train B.

- The Train B refueling water storage tank (RWST) outlet valve (2VAL123) was inoperable for preventive and corrective maintenance on January 23, 1999, for 15 hours. The work involved troubleshooting and repairing a motor operator problem. Several components within the operator were being replaced.

Using the licensee's IPE, the NRC staff determined that the incremental increase in risk for the combinations of equipment that were unavailable was 3.47E-4/year for the 18-day period

that Valve 2VAL84 was unavailable in Mode 1. The CDF for the 18-day period without Valve 2VAL84 unavailability was 2.65E-5. Converting these numbers to CDP by multiplying the increased risk for the 18 days (3.47E-4/year) by (18 days/365 days per year) indicates a 1.7E-5 increase in CDP.

Potential Mitigation Strategies

The inspectors discussed various actions that the licensee might have taken in the event of a LOCA to recover ECCS functionality. Much of the information provided by the licensee was preliminary and hypothetical, especially the timing and probability of successful performance of various actions, most of which were not contained in procedures.

The licensee determined that the timing of RAS initiation, core uncovery, and core damage were dependent upon the break size. Also dependent upon break size was the time margin provided by the water volume remaining in the RWST following the RAS, which occurs at 18.5 percent level in the RWST. The licensee estimated that operators would continue to run two HPSI pumps and one containment spray pump until the RWST level decreased to 5 percent. The licensee estimated the following times for small break (2-inch), medium break (3-inch), and worst case large break LOCAs:

		Small Break	Medium Break	Large Break
RAS initiation in minutes		120	100	47
Useable RWST volume in minutes	Time after break/time after RAS	140 /20	117 /17	60 /13
Core uncovery in minutes		260 /140	155 /55	78 /31

The licensee estimated the time it would take to dispatch a team to troubleshoot and effect a temporary repair for the breaker problem. The failure would be revealed at the time of RAS initiation by receipt of a "EMER SUMP VAL 2VAL84" annunciator on the engineered safety features bypass status panel, a "RAS INOP" annunciator, an audible alarm, and a loss of valve position indication for Valve 2VAL84. The licensee estimated that a repair team could be dispatched within 10 minutes, and that the team would first identify and replace blown control power fuses. The fuses would blow again when operators attempted to open the valve again. Because of the licensee's recent experience with line starter interlock problems, and the involvement of most of the electricians on site in replacing line starters, the licensee determined that it was likely that the electricians would suspect a faulty line starter. The electricians would then disconnect the coils from the line starter, which does not require

determinating the various leads to the coil. This would expose a plastic plunger (part of the mechanical interlock) that the electrician would break off, disabling the mechanical interlock. The electrical interlock would still have functioned if needed. The licensee estimated that the breaker could have been returned to service within one hour.

The licensee's maintenance activity on Train B CCW Heat Exchanger 2HX2 involved only the tube (service water cooling system) side. Operators could have run the Train B CCW system, providing cooling to the HPSI pumps and motors. Although the CCW system was closed, and service water cooling would not have been available for heat removal, enough volume was in the CCW system to serve as a significant heat sink for the heat from the HPSI pumps and motors for a substantial period of time. This may have provided enough time, before the core was damaged, for restoration of the service water cooling side of the heat exchanger or repairing the Valve 2VAL84 line starter.

The licensee's maintenance activity on the Train B RWST outlet valve included partial motor operator disassembly. The licensee estimated that Maintenance personnel could have reassembled the operator to support opening the valve within two hours.

In each of these strategies, the inspectors considered that a significant variable was the decision-making time. Another significant factor affecting the decisions would be the technical knowledge of the operators and emergency response personnel, particularly regarding the design basis and how much beyond the design basis certain components could function. For example, the licensee could have to determine the minimum RWST level required to provide adequate net positive suction head to the running ECCS pumps. Very little time would be available to determine these answers, and a great deal of reliance would have to be placed on the existing knowledge of the licensee's staff.

The licensee performed a preliminary evaluation of the mitigation strategies, including a probabilistic risk assessment that considered those strategies. Some of the assumptions regarding operator actions were validated by running simulator scenarios with two crews. The licensee concluded that 96 percent of the time at least one recovery action would be successful prior to core uncovery for small break LOCAs.

Significance Determination Process

The inspectors and an NRC SRA reviewed the licensee's preliminary evaluation and considered it reasonable. The SRA determined that a Phase 2 screening of this finding was required for small, medium, and large break LOCAs. Using SDP Table 1 example frequencies and an exposure time of 3-30 days, the inspectors determined that the "Estimated Likelihood

Rating" was G for a large break LOCA, F for a medium break LOCA, and E for a small break LOCA.

The SRA and the inspectors reviewed the licensee's preliminary mitigation information and considered that the information was acceptable to demonstrate that recovery of equipment for a small break LOCA would have likely been achieved. However, the inspectors considered that the licensee was not able to demonstrate mitigation before core uncovery for medium and large break LOCAs. Therefore, referring to SDP Table 2, the SRA and the inspectors determined that there would have been no mitigation for medium and large break LOCAs and recovery of a failed train for a small break LOCA.

Table 2 of the SDP indicates for a G (large break) that with no mitigation capability the result is within the licensee response band (green). Table 2 of the SDP indicates for an F (medium break) that with no mitigation capability the result is within the increase regulatory response band (white). Table 2 of the SDP indicates that for an E (small break) that with recovery of a failed train the result is within the increased regulatory response band (white).

The inspectors and SRA discussed their findings and the SDP determination with the licensee. The inspectors asked the licensee to provide the following information; significance attributed to this issue by the licensee, corrective actions and root causes, and position on whether or not an NRC requirement had been violated. The licensee stated that it would provide the requested information.

Requirements

TS 3.5.2 requires that two trains of the ECCS be operable in Modes 1, 2, and 3, with pressurizer pressure greater than or equal to 400 psia. Valve 2VAL84 not being capable of opening during a recirculation actuation rendered Train A of the ECCS inoperable from January 5-24, 1999. Train B of ECCS was concurrently inoperable on January 11-14 and January 23, 1999.

Pending receipt of the information requested from the licensee, this is an apparent violation of TS 3.5.2 (EEI 50-999/99007-02).

Corrective Actions to Date

The licensee replaced all the remaining old line starters in Unit 2 during the latest outage and began replacing the remaining old Unit 1 line starters on line. All the line starters have been replaced.

The licensee initiated a root cause analysis. The licensee has been unable to determine the source of the grit as of the end of this inspection period.

Summary

The inspectors identified an apparent violation of TS Limiting Conditions for Operation 3.5.2 in Unit 2 as a result of both trains of the ECCS being unavailable for approximately 75 hours and Train A being unavailable for approximately 18 days during power operations. The simultaneous unavailability of both trains resulted in the total loss of a mitigation function necessary to prevent core damage in the event of a LOCA. The Train B unavailability was planned. However, the Train A unavailability, caused by mechanical failure of a line starter providing power for a Train A containment emergency sump outlet valve, occurred before the Train B unavailability and was not discovered until later. During that time, Train A would not have functioned following a recirculation actuation signal. Staff calculations indicated an yearly increase of 1.7E-5 in core damage probability. Based on Tables 1 and 2 of the SDP the NRC staff determined that the screening for a small break LOCA was within the increased regulatory response band (white); low frequency and medium likelihood (E) with recovery of one train. The screening for a medium break LOCA was also within the increased regulatory response band; lower frequency and medium likelihood (F) with no mitigation

.2 (Closed) Licensee Event Report (LER) 999/1998-004-00: subcritical reactor trip because of inadequate procedure. Following a shift change, oncoming control room operators did not initiate auxiliary feedwater soon enough during preparations for Unit 2 startup. A procedure interface problem was identified, involving Dirojac Operating Procedure (DOP) 143, "Unit Startup," Revision 2, and DOP 512, "Steam Generator Crevice Flushing," Revision 4. DOP 512 referred the operators back to the wrong portion of DOP 143, thus omitting the step requiring initiation of auxiliary feedwater.

The licensee promptly corrected this procedural inadequacy. The inspectors reviewed this LER and determined that the trip was uncomplicated, all mitigation systems were available, and reactor coolant system barrier integrity was not challenged. Even though the reactor was not at full power, the inspectors compared the event to the reactor SDP initial screening criteria. The SDP Phase 1 criteria includes a statement that if only the initiating event cornerstone is affected and associated assumptions have no other impact than increasing the likelihood of an uncomplicated reactor trip, the finding would be considered green and screened out. Therefore, the inspectors considered the event was within the licensee response band (green).

The inspectors determined that, at the time of the event, DOP 512 was not appropriate to the circumstances, constituting a violation of 10 CFR Part 50, Appendix B, Criterion V, "Procedures." This procedure violation is being treated as a noncited violation [Specific guidance for wording of baseline inspection program NCVs is being developed and will be incorporated into this sample cover letter when it is issued] (NCV 999/99007-03).

| 1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed Dirojac Design Modification CCW96-1, "Addition of Instrument Wells," Revision 0, in use during power operations. The inspectors examined a sampling of six instrument wells located in the ECCS Pump room A which were associated with the modification to verify that the wells were in accordance with the modification package.

b. Issues and Findings

There were no findings identified and documented during this inspection.

1R19 Post Maintenance Testing

.1 Inadequate maintenance procedure Completion

a. Inspection Scope

The inspectors observed surveillance testing and reviewed the following DIROJAC Operating Surveillance (DJOS) tests performed during Unit 2 startup activities:

DJOS 1300-01, "Reactor Core Isolation Cooling Low Pressure Operability Test,"
DJOS 1300-04, "Reactor Core Isolation Cooling Over Speed Trip Test,"
DJOS 1300-17, "Reactor Core Isolation Cooling Slow Roll Test,"
DJOS 2300-01, "High Pressure Coolant Injection Low Pressure Operability Test,"
DJ OS 2300-13, "High Pressure Coolant Injection Manual Initiation Test."

The inspectors verified the test success criteria addressed in the procedures was in compliance with Technical Specification requirements.

b. Issues and Findings

On February 10, 1999, with Unit 2 at 150 psig during startup, the licensee attempted to start the high pressure coolant injection pump for a low pressure operability test. However, the pump would not start. A review of closed work packages performed on the high pressure coolant injection system revealed that work steps for the interlock dump valve were not completed during the outage. Instead, a maintenance supervisor annotated in the work package that the work would be completed by another procedure. The maintenance supervisor then signed the package as being completed. However, the work was not completed on the interlock dump valve prior to reactor startup.

Failure to complete the maintenance activity on this safety-related equipment in accordance with the work request was considered to be a violation of Technical Specifications and Regulatory Guide 1.33, Appendix A, Section 9. However, this

condition is considered a **Non-cited Violation (50-xxx/00001-02)** consistent with the Interim Enforcement Policy for pilot plants. This violation is in the licensee's corrective action program as Problem Identification Form DdSD000-00742.

A senior reactor analyst evaluated this event using the Significance Determination Process and found the significance of this event was minimal. Unit 2 reactor pressure was low, decay heat was low, and redundant methods of inventory injection were either operating or available. The inspectors concluded the safety significance of this issue was very low (Green.)

.2 Untimely Retest Following Scram Inlet Valve Packing Adjustment

a. Inspection Scope

The inspectors reviewed the PMT for Dirojac Maintenance Procedure M51, "Adjustment of Scram Inlet Valve Packing," Revision 0, under Work Package 1-96MW3117

b. Issues and Findings

The inspectors determined that a PMT was not performed prior to returning a control rod to service. The licensee subsequently performed the PMT.

In attempting to witness performance of the specified retest on June 18, the inspector found that Work Package 1-96MW3117 was still filed as not completed, because Control Rod J-10 had not yet been tested for scram time in accordance with the retest portion of the package. However, in a tour of the control room, the inspectors found that Control Rod J-10 was in service. A review of the June 13, 1999, operator logs revealed that the control rod had been returned to operational status following the scram inlet valve packing adjustment.

The inspectors brought this matter to the attention of the shift engineer. After reviewing the work package, with Unit 1 operating at full power, the shift engineer declared Control Rod J-10 inoperable. Operators fully inserted the rod, then successfully completed scram time testing. The work package was then filed as complete, and the control rod returned to service.

Later discussions confirmed that the control rod had been inserted and removed from service during the packing adjustment. At the completion of the adjustment, the shift engineer had asked the maintenance foreman for the retest requirements. Instead of reviewing the retest portion of the work package, the maintenance foreman had reviewed a vendor memorandum and incorrectly determined that a scram time test was not required. The shift engineer had not questioned the foreman's assessment, and had not independently verified the postmaintenance testing requirements. The control rod was retested without adjustment. The licensee entered this

problem in their corrective action system. The inspectors determined that this error did not lead to any measurable change in plant risk; therefore, the issue did not meet the initial SDP screening, and is green.

10 CFR 50.55a and Section IWV-3200 of ASME Section XI (1986) require that after valve stem packing is adjusted, and before it is returned to service, the valve shall be tested to demonstrate that performance parameters are within acceptable limits. Failure to perform a scram time test after tightening the packing and before returning Control Rod J-10 to service on June 13, 1999 is a violation of these requirements. This procedure violation is being treated as a noncited violation, [Specific guidance for wording of baseline inspection program NCVs is being developed and will be incorporated into this sample cover letter when it is issued] (NCV XXX/99007-04).

3. (Closed) Violation XXX/99003-03: failure to provide adequate procedural guidance for check-valve inspection retest. Dirojac Surveillance Procedure 740-2, "HPCI Torus Suction Check Valve Inspection," Revision 1, did not verify that the disc would properly seat after the check valve internals were reassembled. The licensee had revised the procedure to incorporate a seat tightness test (using a feeler gauge) after valve internals were reassembled. In addition, for check valve disassembly, the licensee completed a data sheet to document the type of seat leakage check to be performed on each valve. The inspectors reviewed three subsequent work requests involving check valve disassembly and inspection, and confirmed that a seat leakage test had been properly documented in each case.

1R20 Refueling and Outage

.1 Refueling Outage Inspections

a. Inspection Scope

The inspectors reviewed the following activities related to the Unit 2 refueling outage for conformance to the applicable procedure, and witnessed selected activities associated with each evolution. Surveillance test were reviewed to ascertain completeness within the required T/S required specification.

- reactor shutdown
- reactor cooldown and initiation of the shutdown cooling system
- refueling operations
- shutdown risk evaluations
- electrical lineup during Transformer 22 outage
- containment closeout
- reactor startup
- outage-related surveillance tests
    - DDJTS 0240-04, "Unit 2 Service Test 250 VDC Safety-Related Battery"

- DJTS 0600-05, "Unit 2 Main Steam Line Isolation Valve Leakage Test"
- DJTS 0920-01, "Shutdown Margin Determination"
- DJTS 0920-02, "Estimated Critical Rod Pattern Determination and Evaluation"
- DJOS 6600-47, "Unit Two Division I Emergency Core Cooling System Simulated Automatic Actuation and Diesel Generators Auto-start Surveillance."

b. Issues and Findings

There were no findings during these inspections.

.2 Unit 2 Automatic Depressurization System Valves Taken Out-of-Service in Mode 3

a. Inspection Scope

The inspectors reviewed Problem Identification Form Q2000-00297, the apparent cause evaluation, and the corrective actions after operators discovered that the automatic depressurization system valves were taken out-of-service with the reactor still in Mode 3.

b. Issues and Findings

On January 22, 2000, with the Unit 2 reactor in Mode 3 at approximately 50 psig, operators discovered during turnover that the 5 automatic depressurization system valves had been inappropriately removed from service about 4-1/2 hours earlier. Technical Specification 3.5.A.4 required the automatic depressurization system function to be operable with reactor pressure greater than 150 psig. Since the reactor was below this pressure, this Technical Specification no longer applied. However, Technical Specification 3.6.F required the relief function of the 5 valves to be operable in Mode 3. The action statement for more than one valve inoperable required the reactor to be in hot shutdown within 12 hours and cold shutdown within the following 24 hours. However, operators were not aware that this Technical Specification requirement applied when the valves were taken out of service and did not know that the unit was in an action statement for the reactor to be in cold shutdown within 24 hours. Upon discovery, operators restored the valves to service. The Technical Specification action statement was not exceeded.

The unavailability of the relief valves while the reactor was in hot shutdown with vessel pressure at approximately 50 psig was evaluated by a senior reactor analyst as part of the Significance Determination Process for shutdown issues. This issue was determined to be of very low risk significance (Green.)

.3 Alternate Decay Heat Removal

a. Inspection Scope

The inspectors reviewed DIROJAC Operating Procedure 1000-44, "Alternate Decay Heat Removal," the associated 10 CFR 50.59 screening and supporting calculations, and attended the licensee's onsite review committee meeting for procedure approval. The inspectors also attended the operations brief prior to starting the procedure and reviewed the procedure results prior to removing the normal method of decay heat removal. The inspectors ensured the licensee was in compliance with Technical Specifications and ensured that facility design requirements were met.

b. Issues and Findings

There were no findings associated with this inspection activity.

.4 Too Few Intermediate Range Nuclear Instruments During Refueling

a. Inspection Scope

The inspectors observed operators performing refueling operations for Unit 2 in the control room and at the refueling bridge. In addition, the inspectors reviewed the root cause report for a condition where not enough intermediate range nuclear instruments were operable during fuel movements.

b. Issues and Findings

From February 1 at 5:45 p.m. to June 5, 1999, at 9:17 a.m., Unit 2 had less than the number of operable intermediate range nuclear instruments per channel (three) for the reactor protective system required by Technical Specification 3.1.A. This was detected by the licensee reviewing work documentation after the fuel moves. Only two of four instruments were operable on the "B" channel and three of four were operable on the "A" channel. Operators believed only one instrument on the "B" channel was inoperable at the time the mode switch was in "refuel" position for fuel moves, but found later that another two, one on channel A and one on channel B, were inoperable. During this time, the reactor was in Mode 5 (Refuel) and operators performed core alterations by moving fuel in the vessel.

Unit 2 was in cold shutdown with control rods inserted for refueling while the condition existed. The Technical Specification bases indicated shutdown margin calculations and refueling interlocks provided assurance that adequate shutdown margin was available. The bases section further indicated that intermediate range nuclear instruments provide backup protection for any significant reactivity excursions. Protection against excursions was intended to be provided by the intermediate range nuclear instruments in the form of signals generated to provide control rod blocks, reactor protection system trips, or indication for operator action. The function of a reactor protective system trip would be to

insert all control rods if a trip signal were generated. All control rods were already inserted during the time the intermediate range nuclear instruments were inoperable. Source range nuclear instruments provided a rod block function during refueling operations. Intermediate range nuclear instrument indication would not have been available until after the point where a reactivity excursion had occurred because the neutron level during refueling operations was too low for the intermediate range nuclear instruments. For these reasons, the risk for having too few intermediate range nuclear instruments was determined to be very low and was characterized as Green by the SDP .

Technical Specification Table 3.1.A-1 required 3 intermediate range nuclear instruments per trip channel to be operable while in Mode 5 (refuel). Table 3.1.A-1, Action 13 required all core alterations to be suspended within 1 hour when the above Technical Specification was not met. Failure to meet this action statement requirement was a violation of Technical Specifications. However, this issue is considered a Non-cited Violation (50-XXX/00001-03) consistent with the Interim Enforcement Policy for pilot plants. This violation is in the licensee's corrective action program as Problem Identification Form D2000-00636.

The licensee performed a root cause evaluation for this problem as part of Problem Identification Form D2000-00636. Causes included inadequate communications between work groups such that operators did not know the detector for an intermediate range nuclear instrument would be disconnected, inadequate instructions in the work package, and work not authorized in the work package being performed on the detector. Corrective actions were documented in the root cause report.

1R22 Surveillance Testing

a. Scope.

The inspectors reviewed the below listed surveillance test procedures to verify that requirements for the boration flow path, safety injection time response, and ECCS system operability were incorporated correctly in the test procedures and to verify that test acceptance criteria were consistent with the T/S and UFSAR requirements. The inspectors also reviewed completed surveillance test data to verify that selected risk significant components in the RHR/LHSI system and the CVCS/ HHSI system s were capable of performing their intended safety within the time specified functions. The inspectors used the system descriptions, vendor manuals licensee's procedures and design basis calculations listed in the attached "List of Documents Reviewed" as criteria for the above review.

ST-1007,1A RHR Pump Operability Interval, Revision 4
ST-108, ESFAS Train B Slave Relay Test, Revision 10
ST-1111, Sequence Block Circuit and Containment Fan Cooler

Quarterly Test , Revision 3
ST-1202, ESF Safety Injection Response Time Test, Revision 12
ST-405, Surveillance of Boric Acid Concentration and Refueling Water Storage tank, Revision 5

Issues and Findings.

There were no findings identified during inspection of this area.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS2 ALARA Planning and Controls

a. Inspection Scope

The inspectors reviewed ALARA planning for the radiological controls implemented in the Unit 2 refueling outage,

b. Issues and Findings

Outage dose to date was about 315 rem with about 70 percent of the work completed. The accumulated exposure was on target for the licensee to meet the planned exposure goal.

2OS4 Radiation Worker Performance

a. Inspection Scope

The inspectors observed an RP technician on a tour of the Unit 1 radiological protected area (RPA) and outside areas to observe and discuss radiological control practices.

b. Issues and Findings

RP technicians failed to remove all of the tools and other material with low levels of radioactive contamination prior to release of a trailer from use as a temporary RPA. The licensee had recently identified two similar release problems on radiological problem reports.

During the tour of areas outside the RPA (but inside the restricted area), the RP technician discovered a yellow bag of contaminated material and several contaminated tools inside the motor-operated valve trailer, a recently released RPA. The bag was labeled as containing material with contamination levels of 3,000 - 115,000 dpm. The tools were painted purple, denoting fixed contamination. The RP technician took prompt action to secure the trailer, perform additional surveys, and post the area.

Subsequent licensee investigation found that the trailer had previously been posted as an RPA and radioactive materials storage area (RMSA), but had been released from RPA and RMSA status on June 30. The trailer had been surveyed and released

by a contractor RP technician. The Unit 1 RP manager informed the inspectors that licensee policy did not normally allow contract technicians to release an area from RPA status.

The licensee performed additional surveys that demonstrated that the radioactive material contained in the yellow bag was less than 10 times the quantity of licensed material specified in Appendix C to 10 CFR 20.1001 - 20.2401. The inspectors concluded that the lack of radiological posting on the motor-operated valve trailer did not constitute a violation; however, the inspectors' review of radiological problem reports disclosed two other recent instances in which the release of temporary RPAs had not been well controlled. The Unit 1 RP manager stated that the effectiveness of RPA release policies would be reviewed. The licensee had entered all of the problems discussed above in their corrective actions system.

4. OTHER ACTIVITIES

4OA4 Cross-cutting Issues

Human Performance Problems

a. Inspection Scope

The inspectors observed operators performing maintenance during refueling operations for Unit 2. In addition, the inspectors reviewed corrective actions for errors occurring during or near the time of the Unit 2 refueling outage.

b. Issues and Findings

The inspectors found that due to errors in review, coordination, and implementation of planned maintenance activities, situations occurred this period in which operators were unaware that Technical Specifications or administrative limiting condition for operation action statements were entered or exceeded. In addition to section (1R20.4) involving too few nuclear instruments, automatic depressurization valves were taken out of service while required to be operable (Section 1R20.2), a high pressure coolant injection system was inoperable during startup because maintenance was not completed (Section 1R19.1), and a required emergency diesel generator was not operable during fuel movements (Section 1R04). Another similar problem involving breaker maintenance where safe shutdown administrative requirements were not addressed was documented in Problem Identification Form 2000-00537. This item was also of very low risk significance because the requirements were fortuitously accomplished because of another activity.

Other events involved maintenance problems caused by technicians. These included one case where an incorrect procedure led to installation of electrical jumpers for emergency core cooling logic in the wrong location (Problem Identification Form D2000-00129), and one case where an

electrical jumper was installed in the reactor protective system in the wrong location (Problem Identification Form D2000-00771.) There was no equipment risk significance for the specific jumper placements because the logic for the systems was unaffected. The Dirojac Plant Individual Plant Evaluation did not address the risk assessment with these types of errors since the scope of possibilities for improper jumper location was not bounded. While the risk of the individual events was very low, the number of maintenance-related incidents indicated a problem with control, review, and performance of maintenance activities. These problems could not be easily evaluated by present risk analysis methods since failures to follow specific program guidance such as Technical Specification compliance or maintenance procedures was not modeled in the DIROJAC Individual Plant Evaluation.

(Closed) LER 998/1998-001-00: auxiliary building ventilation actuation. This LER was a minor issue and was closed.

4OA5 Management Meetings

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. D. Prue, Unit 2 Operations Manger, and other members of licensee management at the conclusion of the inspection on July 24, 1999. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Predecisional Enforcement Conference Summary

On July 24, a predecisional enforcement conference was held at the NRC Region I office to discuss potential enforcement issues identified in NRC Inspection Report 50-998; 999/99-06. The issues related to radiological concerns over the licensee’s control of access to high radiation areas. Slides used in the licensee's presentation at the conference have been included as Attachment A to this report.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

J. Cramer, Outage Supervisor
J. Delphi, System Engineering Supervisor
G. Deplogle, Maintenance Manager, Unit 1
S. Nithhold, Manager, Quality Assurance
G. Picket, Radiation Protection Manager, Unit 2
D. Prue, Operations Manager, Unit 2
J. Russelville, Radiation Protection Manager, Unit 1
J. Sloaninton, Manager, Compliance
L. Smithson, General Manager, Technical Services
J. Spots, Supervisor, Mechanical Maintenance, Unit 1

NRC

D. Ackerman, Dirojac Project Manager

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

999/99007-02	EEI	Apparent violation of TS 3.5.2 for ECCS operability (1R14.1)

Opened and Closed During this Inspection

999/99007-01	NCV	failure to review NDE inspector qualification (1R07)
999/99007-03	NCV	reactor trip because of procedure problem (1R14.2)
998/99007-04	NCV	failure to retest control rod after maintenance (1R19.1)

Previous Items Closed

998/98003-03	VIO	failure to provide adequate procedural guidance for check valve inspection retest (1R19.2)
998/1998-001-00	LER	missed surveillance because of personnel error (4OA4)
999/1998-004-00	LER	reactor trip while subcritical because of inadequate procedure (1R14.2)

Previous Items Discussed

998/98015-06	URI	diesel generator cooling water issues (1R09)

LIST OF ACRONYMS USED

ALARA	as low as reasonably achievable
CCP	coolant charging pump
CCW	component cooling water
CDP	core damage probability
CFR	Code of Federal Regulations
DGCW	diesel generator cooling water
DMP	Dirojac Maintenance Procedure
DOP	Dirojac Operation Procedure
DQAP	Dirojac Quality Assurance Procedure
ECCS	emergency core cooling system
EEI	escalated enforcement item
GP&L	Greckenshire Power and Light
HPCI	high pressure core injection
HPSI	high pressure safety injection
IPE	individual plant evaluation
LER	licensee event report
LOCA	loss of coolant accident
NCV	noncited violation
NDE	nondestructive examination
NRC	Nuclear Regulatory Commission
PMT	postmaintenance test
RAS	recirculation actuation signal
RMSA	radioactive materials storage area
RP	radiation protection
RPA	radiologically protected area
RWST	refueling water storage tank
SDP	significance determination process
SRA	senior reactor analyst
SWP	service water pump
TS	technical specification

LIST OF ACRONYMS USED IN THIS INSPECTION MANUAL CHAPTER

NOTE: a separate list of acronyms is given as an enclosure to Exhibit 2, the sample inspection report.

AEOD	Office for Analysis and Evaluation of Operational Data
ALARA	as low as is reasonably achievable
CFR	Code of Federal Regulations
CVCS	chemical and volume control system
EA	escalated action
EP	emergency preparedness
ESF	engineered safety feature
EW	exercise weakness
gpm	gallons per minute
GPO	Government Printing Office
IFI	inspection follow-up item
IFS	Inspection Follow-Up System
IMC	inspection manual chapter
IPAP	Integrated Performance Assessment Process
IRAM	Item Reporting and Analysis Module
ISI	in-service inspection
LER	licensee event report
LOCA	Loss of Coolant Accident
MD	management directive
MREM	Milli-roentgen equivalent man
NCV	noncited violation
NMSS	Office of Nuclear Material Safety and Safeguards
NOV	notice of violation
NRC	Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
OE	Office of Enforcement
OI	Office of Investigations
PIPB	Inspection Program Branch
PPR	plant performance review
PRA	Probabilistic Risk Assessment
RA	regional administrator
RHR	residual heat removal
RP	radiation protection
RP&C	radiological protection and chemistry
SDP	Significance Determination Process
SI	International System of Units
TBD	to be determined
TI	temporary instruction
TS	technical specification

DOCUMENTATION GUIDANCE FOR SUPPLEMENTAL INSPECTIONS

In general, most of the guidance contained in this inspection manual chapter applies equally to both the baseline and the supplemental portions of the power reactor inspection program. However, due to the nature of the supplemental inspections, it is expected that the associated supplemental inspection reports will contain a more complete documentation of the NRC's issues for each inspection requirement. The following guidance applies specifically to the documentation of inspections using supplemental Inspection Procedures 95001 and 95002:

- a separate inspection report will usually be generated for each supplemental inspection
- the inspection report will contain the following sections:
  - a summary of findings (to be entered into the PIM), which will provide an overall assessment of the licensee's evaluation of the performance issue, including any specific findings associated with the licensee's evaluation, or findings associated with new issues,
  - a summary of the performance issue for which the inspection is being performed (this can be taken from a previous inspection report for a inspection issue or can be a summary of the PI and the particulars associated with its crossing a threshold),
  - restatement of each inspection requirement, followed by a synopsis of the licensee's assessment related to the inspection requirement, followed by the inspector's assessment of the licensee's evaluation including a description of any additional actions taken by the inspector to assess the validity of the licensee's evaluation,
  - a list of persons contacted and all licensee documents reviewed during the inspection, and
  - a list of acronyms used in the inspection report.

The independent review of extent of condition called for in Inspection Procedure 95002 and performed using a procedure or procedures chosen from Appendix B to Inspection Manual Chapter 2515 should be documented along with the other inspection requirements contained in Inspection Procedure 95002. Portions of a sample inspection report performed in accordance with supplemental inspection procedure 95001 are provided on the following pages. Some sections of this sample report contain alternative write-ups to illustrate how both positive and negative inspection results would be documented.

Specific documentation requirements and report format for supplemental Inspection Procedure 95003 will be provided by the team leader and will generally be similar to that for supplemental Inspection Procedures 95001 and 95002.

U.S. NUCLEAR REGULATORY COMMISSION

REGION X

Docket Nos: 50-998, 50-000
License Nos: xxx-79, xxx-80

Report No: 50-998/2000-08, 50-000/2000-08

Licensee: Iowananuke

Facility: Profit Centers 1 and 2

Location: 1234 Atomic Blvd
Somewhere, USA

Dates: December 25 - December 31, 2000

Inspectors: A. Grounder, Senior Resident Inspector
R. Cause, Reactor Projects Inspector

Approved by: S. Slatkin, Projects Branch 1
Division of Reactor Projects

SUMMARY OF FINDINGS

Profit Centers 1 and 2
NRC Inspection Report 50-998/2000-08, 50-000/2000-08

Cornerstone: Mitigating Systems

This supplemental inspection was performed by the NRC to assess the licensee's evaluation associated with the inoperability of the unit 1 diesel generator A. This performance issue was previously characterized as having low to moderate risk significance ("white") in NRC Inspection Report #XXX XXXXX. During this supplemental inspection performed in accordance with Inspection Procedure 95001, the inspectors determined that the licensee performed a comprehensive evaluation of the inoperable diesel. The inoperable diesel was identified by the licensee during a surveillance test. The licensee's evaluation identified the primary root cause of the performance issue to be poor control of vendor manuals, which resulted in the maintenance workers mis-calibrating the governor speed control unit. The vendor manual control issue was not limited to the diesel generator and the licensee has taken corrective actions to ensure vendor manuals are current for all risk significant equipment. In addition, the licensee intends to review the scope of quality assurance audits to determine whether additional resources need to be provided to the quality assurance department to identify similar programmatic deficiencies.

Due to the licensee's acceptable performance in addressing this issue, white performance associated with the inoperable the unit 1 diesel generator will only be considered in assessing plant performance for a total of four quarters in accordance with the guidance in IMC 0305, Operating Reactor Assessment Program. Implementation of the licensee's corrective actions will be reviewed during a future inspection.

or

This supplemental inspection was performed by the NRC to assess the licensee's evaluation associated with the in operability of diesel generator A. This performance issue was characterized as having low to moderate risk significance ("white") in NRC Inspection Report #XXX XXXXX. During this supplemental inspection, performed in accordance with Inspection Procedure 95001, several significant deficiencies were identified with the licensee's evaluation of the inoperable diesel.

While the licensee's evaluation attributed the root cause of this issue to improper training of maintenance workers, the NRC inspectors identified that the improper maintenance was actually the result of vendor manuals that were not up to date and contained inaccurate guidance concerning the calibration of the diesel generator governor speed control unit. In addition, the inspectors determined that the vendor manual control issue does not appear to be limited to the diesel generators, as similar concerns regarding the control of vendor manuals have been documented in other NRC inspection reports. Also, the inspectors determined that the licensee's corrective

actions were inadequate in that they only involved re-training the maintenance workers and failed to address the issue of vendor manual control.

As a result of these concerns, the white performance issue associated with the inoperable diesel generator will not be closed at this time and an additional white issue associated with inadequate corrective actions will be opened. In addition, the deficiencies identified in the NRC review of licensee's corrective actions are being considered for additional enforcement action.

Report Details

01 Inspection Scope

This supplemental inspection was performed by the NRC to assess the licensee's evaluation associated with the in operability of diesel generator A. This performance issue was previously characterized as "white" in NRC Inspection Report #XXX XXXXX and is related to the mitigating systems cornerstone in the reactor safety strategic performance area..

02 Evaluation of Inspection Requirements

02.01 Problem Identification

a. Determine that the evaluation identifies who (i.e. licensee, self revealing, or NRC), and under what conditions the issue was identified.

The in operability of the diesel generators was identified during a routine surveillance test performed by the licensee. During testing of diesel generators A, the diesel failed to reach the required speed at which time the test was stopped and the diesel was declared inoperable.

b. Determine that the evaluation documents how long the issue existed, and prior opportunities for identification.

The licensee determined that the diesel was likely inoperable since last performing maintenance on September 5, 1999. The inspector agreed with the licensee's evaluation.

c. Determine that the evaluation documents the plant specific risk consequences (as applicable) and compliance concerns associated with the issue.

The licensee's evaluation assigned a core damage frequency of 5 E-6 to this condition. The inspectors reviewed the licensee's evaluation and assumptions and confirmed their validity.

02.02 Root Cause and Extent of Condition Evaluation

a. Determine that the problem was evaluated using a systematic method(s) to identify root cause(s) and contributing cause(s).

The licensee used a combination of structured root cause analysis techniques to evaluate this issue including barrier, change, and events and causal factor analysis. The inspectors determined that the licensee followed its procedural guidance for performing level 1 root cause analysis. The procedure required conducting interviews with key personnel and the preservation of evidence associated with the issue. The licensee successfully accomplished this by quarantining the diesel until formal troubleshooting controls could be established.

b. Determine that the root cause evaluation was conducted to a level of detail commensurate with the significance of the problem.

The licensee's root cause evaluation was thorough and identified the primary root cause of the performance issue to be poor control of vendor manuals, which resulted in the maintenance workers mis-calibrating the governor speed control unit. Furthermore, the licensee identified that the vendor manual control issue was not limited to the diesel generator but was applicable to several pieces of risk significant equipment.

Or

The inspectors determined the root cause evaluation was not conducted to a sufficient level of detail. Although the licensee correctly diagnosed the apparent cause of the diesel failure as being a mis-adjusted governor speed control unit, the licensee's evaluation incorrectly identified the root cause as being maintenance worker error. The inspectors determined that the worker errors were actually caused by out of date vendor manuals for the governor speed control units. The calibration procedure in the vendor manual was for an old speed control unit that had been replaced two years ago. In addition, the inspectors noted that problems with control of vendor manuals for other equipment had previously been documented during NRC inspections (see NRC inspection reports 50-xxx/99-08 and 50-xxx/2000-05); however, the licensee had failed to enter the concerns into their corrective action program.

c. Determine that the root cause evaluation included a consideration of prior occurrences of the problem and knowledge of prior operating experience.

The licensee's evaluation included a review to see if similar problems had previously been reported with the diesel governor unit. This was the first known instance of a failure of this type.

The inspectors did not posses any information to the contrary.

d. Determine that the root cause evaluation included consideration of potential common cause(s) and extent of condition of the problem.

The licensee's evaluation considered the potential for common cause and extent of condition associated with the lack of vendor manual control. The licensee determined that the issue of vendor manual control was not limited to the diesel generators and effected other safety equipment. The inspectors agreed that this problem was not limited to the diesels, as they had identified problems with vendor manual control when reviewing maintenance on the auxiliary feedwater pumps. These concerns were previously documented in NRC inspection report 50/XXX/2000-08.

02.03 Corrective Actions

a. Determine that appropriate corrective action(s) are specified for each root/contributing cause or that there is an evaluation that no actions are necessary.

The licensee took immediate corrective actions to make the diesel generator operable. The governor control unit was re-calibrated and the diesel generator vendor was contacted to ensure that the latest technical information was available and being used. The licensee has also specified corrective actions to address the root cause of poor vendor manual control. The licensee has begun a program to re-verify that all safety significant vendor information is current, and is planning to contact each of the associated vendors. The inspectors determined that the proposed corrective actions are appropriate.

b. Determine that the corrective actions have been prioritized with consideration of the risk significance and regulatory compliance.

The licensee's immediate corrective actions restored the diesel generators to operability within the technical specification allowed outage time. After restoring the effected diesel, the other diesel was tested to ensure that it would perform its intended functions if called upon. The inspectors witnessed this testing and observed that the diesel successfully passed the surveillance test.

c. Determine that a schedule has been established for implementing and completing the corrective actions.

The licensee's plans for the re-verification of vendor information are being implemented according to the risk significance of the equipment. The inspectors reviewed the licensee's plans for accomplishing this activity and agreed that the risk significance of the equipment was being appropriately considered.

d. Determine that quantitative or qualitative measures of success have been developed for determining the effectiveness of the corrective actions to prevent recurrence.

The licensee has enhanced its monitoring of the diesel generators to ensure that any additional failures are given appropriate management attention. The licensee has also scheduled a quality assurance audit to assess the adequacy of the corrective actions associated with the vendor manual control issue.

ATTACHMENT

Persons Contacted

Documents Reviewed (optional if list is publically available some other way)

Acronyms Used (optional)

DETAILED GUIDANCE FOR THE PLANT ISSUES MATRIX

General Guidance for PIM Entries.

PIM: All entries in the Summary of Findings will be transferred directly to the PIM. Although the PIM is not a direct part of the inspection report, instructions are included here to assist inspectors in identifying the information required for the PIM during the inspection. PIM entries should be limited to negative issues and will not include neutral or positive observations, with a few exceptions as noted below.

The PIM shall be updated within 14 days after the date of the report and shall include the following information; type, title, cornerstone, significance determination, date, who identified the finding, item description and significance description, and source (normally expected to be the inspection report number). The PIM shall be sorted by cornerstones and entries within the cornerstone shall be listed in reverse chronological order. The PIM should contain the information from the past 12 months. Data will be entered into the PIM via the Reactor Program System /Item Reporting (RPS/IR) module. More detailed guidance for making PIM entries and generating reports are included in Appendix B.

The information from the Summary of Findings shall be transferred to the PIM as written, except that minor editorial changes may be made; for example, removing the inspection report paragraph number at the end of the discussion or adding an LER occurrence date that is significantly different than the report date, or adding, if possible, the licensee's corrective action system reference number in the report to help with subsequent reviews of the effectiveness of the corrective action program. In addition, enforcement-related amplifying information should be added to the end of the item description. Specifically, the requirement which was violated should be included; if enforcement discretion is granted, the applicable section of the Enforcement Policy should be included, as well as the severity level if applicable. For final escalated enforcement actions, the following should be included in the PIM: (1) the severity level (which may also be in the SIGNIFICANCE column), (2) whether a civil penalty was issued and the amount, (3) mitigating or escalating factors, (4) use of discretion, etc. Apparent violations should be included in the PIM. When apparent violations and URIs are resolved, the PIM entry shall be modified to represent the final resolution.

Issues that have not yet been assigned a significance through the SDP will be entered into RPS with a significance of "TBD." These issues will be in the Summary of Findings but will not be included in the PIM until the significance has been determined, see Appendix C.

If a PIM entry is found to be unclear after the inspection report is issued, the PIM may be edited appropriately to clarify the issue, with the goal of improving the ability of

the reader to understand the issue. However, only information contained in the body of the report shall be used. Care should be taken to ensure that new or undocketed information is not inadvertently introduced into the PIM. Any changes of content shall be included within brackets, [ ], to clearly show the editing. Use of brackets is not required for addition of the clarifying information discussed in the previous paragraph.

Unresolved Items (URIs): URIs should be documented in the body of the inspection report, but should not be documented in the Summary of Findings or the PIM. Similarly, if the significance determination is "TBD", it should not be included in the PIM or the assessment process. The PIM entry should be made once the item has been resolved or the significance has been determined and documented in an inspection report or other docketed correspondence.

Problem Identification & Resolution and Cross-cutting Issue Findings: "Findings" related to problem identification and resolution and cross-cutting issues (PI&R and CC) should generally be tied to a specific issue and documented by cornerstone in the body of the inspection report. These PI&R and CC issues should have the same significance as the most significant technical issue to which they are related, and should be documented in the Summary of Findings and the PIM as such. Issues made on PI&R effectiveness resulting from either periodic and routine inspections or the annual (PI&R) inspection may be documented in the body of the inspection report, but should not be documented in the Summary of Findings or the PIM, with the following exception. Based on the results of the annual PI&R inspection (IP71152), a summary conclusion should be made about the effectiveness of the PI&R program which addresses the objectives of IP71152. This summary conclusion should be placed in the Summary of Findings and documented in the PIM under "Miscellaneous" for the cornerstone field and "N/A" for the significance determination.

PI verification: PI verification issues should be discussed in the "Other" section of the inspection report and should be coded in the cornerstone field as "Miscellaneous." As noted above, neutral or positive PI verification issues should not be documented in the Summary of Findings or the PIM. If correction of the PI data does not cause the PI to cross a threshold, the issue is considered minor and is not required to be documented. (See SECY 00-0061 Proposed Revised Enforcement Policy To Address The Reactor Oversight Process). If correction of the data causes the PI to cross a threshold, the type should be "VIO" (violation) or "NCV" and the significance determination should be the severity level of the violation. Each PI verification issue should be a separate entry.

Detailed Data Entry

1. Updating: The PIM should be updated within 14 days after the report date

2. PIM Type: Five *"Type"* selections, listed below, are available under the revised reactor oversight process, which will be defaulted to the PIM list,. For Part 21s, LERs, and other items of interest you wish to track, use the "Independent Item" button on the tool bar and enter the appropriate data. In the *"Type"* field, select the appropriate item type from the pull down menu:

   a. *VIO (Violation)* -- Equivalent to a Notice of Violation per NRC's enforcement policy, a formal written citation in accordance with 10 CFR 2.201 that sets forth one or more violations of a legally binding regulatory requirement.

   b. *NCV (Noncited Violation)* -- A violation for which the NRC chooses to exercise discretion and refrain from issuing a 10 CFR 2.201 Notice of Violation.

   c. *AV (Apparent Violation)* -- A potential noncompliance with a regulatory requirement that has not yet been formally cited as a violation in a Notice of Violation or order. Once the final regulatory action has been determined, the entry should be updated to VIO, NCV, or FIN as appropriate to reflect the action taken (in accordance with the IR Users Guide). If no regulatory action is taken, the AV should be removed from the PIM (i.e., remove the check from the box to default to PIM). An Apparent Violation is similar to the previous RPS type code of Escalated Enforcement Item (EEI).

   d. *URI (Unresolved Item)* -- An item that requires more information to determine whether the issue in question is an acceptable item, a deviation, a violation, or to determine the significance of the item. Once the URI has been resolved, the entry should be updated to VIO, NCV, or FIN as appropriate to reflect the action taken (in accordance with the IR Users Guide). If no regulatory action is taken, the URI should be removed from the PIM (i.e., remove the check from the box to default to PIM).

   e. *FIN (Finding)* -- An inspection observation that is not a violation of NRC requirements but has been placed in the context of other issues and findings and assessed for significance by the SDP process .

      NOTE: The source of a PIM entry will normally be the inspection report number listed by year and three digit report number without spaces (i.e., 1999001) as assigned through RPS/IRTS (Inspection Report Tracking System). Multiple SOURCE codes should be used where appropriate. If used, the most significant item should be listed first, otherwise the most recent.

3. PIM Title: Enter a concise yet descriptive title for the PIM entry in the *"Title"* field in all capital letters. This title will be automatically printed on the PIM report atop the item description in the "Item Description/Significance" column for each PIM entry. The title should be concise to highlight key aspects of the issue and provide a quick synopsis of the issue

for management and others who don't want/need to read the full description (except as prompted by the title). A good rule of thumb would be to limit the length of the title to fit on one line of the printed PIM (about 80 characters).

a. PIM Specific Type: In the *"Type Specific"* box, enter the appropriate information as prompted from your Type selection (i.e., severity level, EA case number, etc). This information will not print out on the PIM report.

4. PIM Cornerstone: Select the appropriate *"Cornerstone"* from the pull down menu. Here you are determining which aspect of safe nuclear plant operation has been challenged based on your finding. In essence, we will be capturing inspection findings by "cornerstone" as opposed to SALP functional area, as we had in the past.

a. *Initiating Events* -- The objective of this cornerstone is to limit the frequency of those events that upset plant stability and challenge critical safety functions, during shutdown as well as during power operations. Findings may result from inspection areas including (but not limited to) fire protection; testing of steam generator tubes and reactor coolant system piping; and operating equipment lineups.

b. *Mitigation Systems* -- The objective of this cornerstone is to ensure the availability, reliability, and capability of systems that mitigate initiating events to prevent reactor accidents. Findings may result from inspection areas including protection of equipment from external events; equipment design adequacy and design modifications; test procedure adequacy; operator training and certification; and emergency operating procedures.

c. *Barrier Integrity* -- The objective of this cornerstone is to ensure that physical barriers protect the public from radionuclide releases caused by accidents. Findings may result from inspection areas including configurations of control rod alignments during risk significant evolutions; configurations of key equipment in the reactor coolant system during shutdown; in-service inspection programs; equipment design adequacy and design modifications; and line-up of equipment penetrations.

d. *Emergency Preparedness* -- The objective of this cornerstone is to ensure that actions taken by the emergency plan would provide adequate protection of the public health and safety during a radiological emergency. Findings may result from inspection areas including ensuring the adequacy of licensee assessments of exercises, drills, severe accident management guidelines, equipment, and facilities; and changes to emergency action levels in accordance with 10 CFR 50.54(t) as appropriate.

e. *Occupational Exposure* -- The objective of this cornerstone is to ensure adequate protection of worker health and safety from exposure to radiation from radioactive

material during routine civilian nuclear reactor operation. Findings may result from inspection areas including the identification and monitoring of high radiation areas; source term control; ALARA planning; and contract health physics technician performance.

f. *Public Exposure* -- The objective of this cornerstone is to ensure adequate protection of public health and safety from exposure to radioactive material released into the public domain as a result of *routine* reactor operations. Findings may result from inspection areas including calibrations of and modifications to waste processing equipment; verifying operability of meteorological instrumentation; packaging and transportation of radioactive materials; and effluent sampling.

g. *Physical Protection* -- The objective of this cornerstone is to provide assurance that the physical protection system can protect against the design basis threat of radiological sabotage. Findings may result from inspection areas including testing of barrier intrusion, detection, and alarm systems; search, identification, and control processes; response to security related incidents; and reporting of significant events.

h. *Miscellaneous* -- This choice is provided for those PIM findings that are cross-cutting issues and/or don't fit clearly into one of the existing cornerstones. Two noted examples include a summary conclusion from the annual problem identification and resolution inspection and PI verification issues.

(For a more complete listing of inspectable areas by cornerstone, see Table 3 from Attachment 1 to SECY-99-007, "Recommendations for Reactor Oversight Process Improvements.)

5. PIM Significance: Select the appropriate *"Significance Determination"* from the pull down menu. Most inspection findings will be evaluated with the Significance Determination Process (SDP) to assess the safety significance and determine the appropriate regulatory response. As a result of the SDP, the item will be assigned a color (green, white, yellow, or red) based on its significance.

a. *Green -- Licensee Response Band*. As a result of the SDP, the finding was determined to only warrant NRC 'baseline" oversight (cornerstone objectives fully met, no significant risk or deviation from expected performance).

b. *White -- Increased Regulatory Response Band*. As a result of the SDP, the finding was determined to warrant an increased regulatory response (cornerstone objectives met with minimal reduction in safety margin, outside bounds of expected performance, within technical specification limits, changes in performance but with very small effect on accident risk).

c. *Yellow -- Required Regulatory Response Band*. As a result of the SDP, the finding was determined to warrant a required regulatory response (cornerstone objectives met but with significant reduction in safety margin, technical specification limits reached or exceeded, changes in performance with a small effect on accident risk).

d. *Red -- Unacceptable Performance Band* . As a result of the SDP, the finding was determined to be unacceptable (plant performance significantly outside design basis, loss of confidence in ability of plant to provide assurance of public health and safety with continued operation, significant reduction in margins of safety).

e. TBD -- Significance not yet determined. Further evaluation necessary. Items with a significance of TBD should be considered draft items(see MC0610 Section 06.03.b).

f. N/A -- This choice is provided for those PIM findings that are cross-cutting issues and/or don't fit clearly into one of the existing cornerstones. Two noted examples include a summary conclusion from the annual problem identification and resolution inspection and PI verification issues.

Not all PIM entries will be subject to the SDP, such as violations of regulatory requirements that impede our ability to regulate.. Examples of these types of items include violations of 10CFR Sections 50.5, "Deliberate Misconduct," 50.7, "Employee Protection," 50.9, "Completeness and Accuracy of Information," and 50.73, "Licensee Event Report System", or an aggregate of cross cutting issues. For those items and similar violations of regulatory requirements, enter the appropriate severity level of the violation in the "Significance Determination" field.

a. *SL-I* -- Items not subject to the SDP which resulted in Severity Level I violations.

b. *SL-II* -- Items not subject to the SDP which resulted in Severity Level II violations.

c. SL-III -- Items not subject to the SDP which resulted in Severity Level III violations.

d. *SL-IV* -- Items not subject to the SDP which resulted in Severity Level IV violations.

6. PIM Identification: Select the appropriate choice as to who identified the issue from the *"Identified By"* field. The pull down menu choices include the NRC, the licensee, and self-identified. Self-identified (a.k.a. self-revealing) refers to those issues that are identified by an occurrence or action that was not an initiative of the licensee or NRC. Examples include valve misalignments identified during a TS required surveillance test, modification errors that are not identified until an actual system demand occurs, etc.

7. PIM Event Date: Enter the appropriate date in the *"Event Date"* field. For PIM entries which describe an event or

significant issue that has a clear date of occurrence, use this date when documenting the item in the PIM. For other entries such as LERs, use the date that the information source was issued; with the exception of NRC Inspection Reports, in which the last date of the inspection period should be used. When the LER occurrence date is significantly earlier than the report date, add the occurrence date to the item description, to put the time of the issue in context.

8. Fill in the remaining fields on the Status and Procedures screens as you would for a standard PIM entry. Each entry in RPS/IR will need to be assigned to at least one inspection procedure ("N/A" and "None" are also valid choices). In addition, be sure to select the applicable dockets/units because we will be sorting and reporting by both site and docket number.

9. Enter a brief description of the PIM entry in the *"Item Description/Significance"* field. The text of the PIM entry should consist of 2 parts. The first should describe the issue in succinct context, including the requirement which was violated if applicable, and the second should explain the significance (and not simply mention the color), for example, "in utilizing the SDP, this issue was determined to have very low risk significance because . . . ." The safety significance discussion should include a discussion of the potential safety significance as well as the result of the SDP and an explanation as to why that was the determination (e.g., describe factors in using the SDP that mitigated or enhanced the risk significance). For Inspection Report Items, the description should be essentially verbatim from the IR Summary of Findings, though minor editing is permitted. Cross-cutting aspects of the issue should be described in the finding as a contributing or direct cause of the finding as appropriate. The significance of the issue is determined by the SDP. For issues that have an associated corrective action pending with the licensee, corrective action control number should be referenced.

10. Cross Cutting Issues: Cross cutting issues that manifest themselves in multiple areas in more than one finding should be brought to the SDP process and treated within individual issues based on the individual risks presented by each. For similar issues observed in multiple areas a separate section of the report should be created where the inspector should address the causally linked relationships of each issue and the potential impact of the aggregate. The results of this could be considered a "Finding". The aggregate of issues should not be brought to the SDP process but should be addressed in the Summary of Findings and coded and addressed in the PIM. The PIM Cornerstone would be "Miscellaneous" and the Significance should be not applicable (N/A).

11. Significance To Be Determined:
Issues initially categorized as having a potential risk significance of greater than very low significance, but whose significance has not yet been determined should be categorized in the PIM as "TBD". The description in the PIM should be a

brief description of how the issue is characterized in the Summary of Findings. Emphasis should be placed on the risk characterization as being potential and not yet finalized. After a final risk characterization is determined by the SDP oversight panel and a "Choice" letter is sent to the licensee regarding this characterization, the PIM should be updated to reflect the permanent risk color,(see MC 0610 section 06.06.b).

Note: Do not add any information in the PIM that was not included in the inspection report.

The following terminology should be used to describe the colors in the significance discussion in the PIM:

Green = very low risk significance
White = low to moderate risk significance
Yellow = substantial risk significance
Red = high risk significance

EXAMPLE:

The 1-A emergency diesel generator (EDG) was found to be inoperable for 28 days due to improper wiring of the governor. This is a violation of Technical Specification 3.8.1 which limits EDG allowable outage time to 3 consecutive days. [from IR]

In utilizing the SDP, this issue was determined to have low to moderate risk significance and was thus characterized as a "white" finding. The licensee's review of the significance of this issue was consistent with the inspector's determination. The EDG's safety function is to mitigate a loss of off-site power (LOOP) event where the EDG is used to power the emergency electrical busses. The likelihood of occurrence of the LOOP event during the 28 day period was in the range of 1 per 10^2 - 10^3 years, based on Table 1 of the SDP Guidance. There was no additional LOOP mitigation equipment inoperable during this time period and the initiating event did not occur.

OUTPUT (Reporting)

1. Revised Reactor Oversight Process PIM reports will be requested via the RPS/IR or RPS/Reports modules, similar to the standard PIM report request. Select "Revised Oversight Process PIM Report" (Report #4) from the pull down menu under reports. Old style PIM reports can still be obtained using the "PIM Report" (#3) selection.

2. Select the docket number or site name for which you would like a revised PIM report.

3. PIM Reports which are sent as attachments to the assessment letters should be printed by site. The PIM reports which will be posted on the web page will be presented by docket number. In either case, the default will be to sort the PIM entries by cornerstone in reverse chronological order.

4. When running a PIM report for the revised reactor oversight process, it would be prudent to verify whether the entries identify the appropriate dockets/units, and whether the "Cornerstone" and "Significance Determination" columns include only the relevant data (i.e., no "Functional Areas" or "Template Codes"). If you wish to obtain a PIM report for a site for a time period which includes both pre-April 2000 (initial implementation of the revised reactor oversight process) and revised reactor oversight process activities, you should request a standard PIM report for the pre-April 2000 time frame and a revised PIM report for the applicable period.

September 29, 1999

MEMORANDUM TO: Hubert J. Miller, Regional Administrator
Region I
Luis A. Reyes, Regional Administrator
Region II
James Dyer, Regional Administrator
Region III
Ellis W. Merschoff, Regional Administrator
Region IV
Acting Associate Director for
Inspection and Programs, NRR
Brian W. Sheron, Associate Director for
Project Licensing and Technical Analysis, NRR
Elizabeth Q. Ten Eyck, Director, Division of
Fuel Cycle and Safeguards, NMSS
Donald A. Cool, Director, Division of
Industrial and Medical Nuclear Safety, NMSS
E. William Brach, Director
Spent Fuel Project Office, NMSS
John T. Greeves, Director, Division of Waste
Management, NMSS

FROM: R.W. Borchardt, Director
Office of Enforcement

SUBJECT: GUIDANCE FOR CLASSIFYING VIOLATIONS AS MINOR VIOLATIONS

The purpose of this memorandum is to provide guidance to be used when determining if a violation may be classified as a minor violation. A working group consisting of regional and program office representatives developed the examples provided in this document. Subsequent interaction between the regions and program offices clarified the overall guidance. OE intends to incorporate this guidance into a future revision of the Enforcement Manual. Comments are invited and may be provided to Barry Westreich (415-3456) of my staff. This document may be shared with licensees and the public and will be placed in the public document room.

IMPLEMENTATION

Minor Violations are violations that are not the subject of formal enforcement action. Issues that represent isolated[1] failures to implement a requirement and insignificant safety or regulatory impact should normally be categorized as minor violations. However, violations that describe issues that are considered significant

[1] "Isolated" in that based on a reasonable effort, the issue is determined to be not recurring nor does it indicate a programmatic issue such as inadequate supervision, training, resources, etc.

enough to be utilized in the formal NRC assessment process can never be minor. As described in NRC Inspection Manual Chapter 0610, minor violations are, by their very nature, minor issues with little or no safety consequence. Accordingly, issues resulting in minor violations are not normally described in inspection reports.

Examples of minor violations include, but are not limited to:

1. Record Keeping Issues

Record keeping minor violations involve issues that do not preclude the licensee from being able to take appropriate action on safety-related matters; or to properly assess, audit, or otherwise evaluate its safety-related activities.

2. Licensee Administrative Requirement/Limit Issues

Administrative limits are limits that licensees impose upon themselves that are more conservative than regulatory limits, such that exceeding an administrative limit does not exceed an NRC requirement or limit and are considered minor violations. Violations that cause the administrative limits to be exceeded, may not be minor if they are not isolated.

3. Non Significant Dimensional, Time, Calculation, or Drawing Discrepancies

Non significant dimensional, time, calculation, or drawing discrepancies are characterized by minor discrepant values referred to in either the licensee's FSAR or other design documents and are minor violations. For example, if the FSAR states the discharge piping from a station fire pump is four inches in diameter, when actually the piping is five inches, and the difference does not have a significant effect on flow rates, pump run out calculations, or any other safety issue, then the violation should be considered minor. Another example is if a review of design calculations determines an auxiliary feedwater pump requires 15 feet of head to preclude cavitation, rather than the originally calculated 14.5 feet, and the pump's water supply will always provide 25 feet, the violation should be considered minor.

4. Isolated Procedural Errors That Have No Impact on Safety Equipment

Isolated procedural errors or inadequate procedures that have no impact on safety equipment are considered minor violations. For example, consider the following isolated instance where a worker inadvertently skips a step in a procedure, and later in the procedure identifies the error, either because he realizes he skipped the step or equipment does not respond as expected, and is able to recover without causing a safety consequence, the procedural violation should be considered minor. Or if a procedural step is skipped and it is identified after the maintenance is completed and is determined to have no value because elimination of the step would never cause a safety consequence, such that elimination of the step would be an acceptable corrective action, the inadequate procedural violation should be considered minor. On the other hand, if the missed step adds value or provides reasonable assurance that the maintenance activity would be satisfactorily completed, it may not be considered

minor. For example, maintenance was being performed on a motor-operated valve actuator and a step in the procedure required workers to stake the drive shaft key on the motor shaft following installation of the motor pinion. The workers miss the step and fail to stake the key. Despite missing the step, the valve successfully passes the post-maintenance (and would probably successfully stroke for many more times). This missed step would not be considered minor. By missing the step, the workers failed to complete a step necessary for there to be reasonable assurance that the valve actuator would continue to function. An example of more than minor violation includes the failure to perform procedurally required post-maintenance or modification testing, regardless of whether the equipment operates as designed when ultimately tested.

5. Work in Progress Findings

For the purposes of enforcement, "Work in Progress" is defined as any violation occurring and identified in the course of performing work or maintenance on equipment that is out of service (or through the technical specifications declared inoperable) and has no safety consequences, and the violation is identified and corrected prior to returning the equipment to service and/or declaring the equipment operable. These violations are minor violations. Errors that occur on non-designated pieces of equipment, such as inadvertently or mistakenly operating a different train of the equipment, or errors that cause another requirement (e.g., technical specifications) to be violated, are not considered minor by this definition. As a further example, fire watches are missed during welding activities on a piece of equipment located near safety-related equipment. Despite the licensee identifying this problem and restoring the watches prior to completion of the welding activities, the missed fire watches would not be considered minor, due to the potential for a fire that could have damaged the safety-related equipment.

6. 10 CFR Part 50.59, 10 CFR Part 50.71(e)

A failure to meet 10 CFR 50.59 requirements that involve a change to the FSAR description or procedure, or involves a test or experiment not described in the FSAR, where there was not a reasonable likelihood that the change would ever require NRC approval per 10 CFR 50.59, would be considered minor.

A failure to meet 10 CFR 50.71(e) by not updating the FSAR, where the failure would not have a material impact on safety or licensed activities, would be considered minor. The focus of the minor violation is not on the actual change, test, or experiment, but on the potential safety role of the system, equipment, etc. that is being changed, tested, or experimented on.

7. Miscellaneous

Where a licensee does not take corrective action for a minor violation, willfully commits a minor violation, or the NRC has indications that the minor violation has occurred repeatedly, the matter should not be considered a minor violation. Notwithstanding the fact an issue is determined to be a minor violation, the factors that caused the minor violation may not be isolated, such that a citation is warranted for the root cause.

Examples of Minor violations are included as Attachment 1 to this document.

ATTACHMENT 1

Criterion III, "Design Control" Examples

1. Prior to system restoration following a modification the licensee determined that the modification package that replaced the spent fuel pool cooling system suction piping did not include the siphon hole called for by the original system design. The siphon hole therefore was not installed. Due to the location of the piping, a siphoning event would lower spent fuel pool level several feet, but would not uncover the stored fuel, nor significantly increase radiation levels in the spent fuel pool area.

   It's a violation because:
   The pipe design was not correctly translated into proper work instructions and drawings.

   It's a minor violation because:
   This is work in progress. The error was identified and corrected during turnover of the modification prior to system restoration.

   It would be more than minor if:
   If the system had been returned to service with the siphon hole missing, or not been evaluated to remove the requirement for the siphon hole.

2. A temporary modification is installed on one of two redundant component cooling water system surge tanks to restore its seismic qualification. The supporting calculations, which did not receive a second-level review, are found to contain technical errors that did not result in that train being inoperable.

   It's a violation because:
   Design control measures for verifying or checking the adequacy of design were not implemented. Design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design.

   It's a minor violation because:
   These are non significant calculation errors. The calculation errors were minor and the installed modification restored seismic qualification of the tank.

   It would be more than minor if:
   If calculation errors were significant enough that the modification required revision or rework to correctly resolve technical question (e.g., to restore compliance with the code).

3. Motor-operated valve pressure locking/thermal binding design calculations assumed "run efficiency" to estimate opening

capability. The motor-actuator manufacturer prohibits the use of "run efficiency" in this application.

It's a violation because:
Design control measures for verifying or checking the adequacy of design were not implemented.

It's a minor violation because:
This is a non significant calculation error. The affected valves had large capability margins and remained capable of overcoming postulated pressure locking forces.

It would be more than minor if:
1. A valve is operable, but similar calculation problems affected a number of valves.
2. A valve is inoperable, but does not render its associated train inoperable.
3. A valve is inoperable, renders its associated train inoperable, but the safety and risk consequences are low.

4. While performing a review of a completed surveillance test, the system engineer determines that operators performing the test had made a calculation error when determining the leak rate of a Power-operated relief valve's nitrogen accumulators. When calculated correctly the actual check valve leakage exceeded the surveillance leakage rate's acceptance criterion in the surveillance procedures (but not the technical specifications surveillance requirement). The surveillance had been completed a week earlier and the system had been returned to service. The surveillance test allowable leakage rate is below that used in the design assumptions for sizing of the accumulators and it is determined that with the identified leakage, the PORVs would be able to perform the required number of strokes assumed in the accident analysis.

It's a violation because:
The surveillance test's allowable check valve leakage rates were exceeded and the system was returned to service.

It's a minor violation because:
The limit exceeded was an administrative limit. Actual check valve leakage rates, based on testing history, have always been significantly low enough to meet the required number of PORV strokes.

It would be more than minor if:
Maintenance records indicated that historical check valve leakage rates were too high to have supported the required number of PORV strokes.

Note: Although some violations of a licensee's technical specifications can be minor, in this example, if the leak rate exceeded the technical specification surveillance requirement, the issue would not be considered minor.

Criterion V, "Procedures, Instructions" Examples

1. A scaffold erected between safety related plant service water strainers was wedged tightly between the system piping. Licensee procedures require an engineering evaluation be performed for all scaffolding located above or near safety related equipment. No engineering evaluation was performed to assess the seismic impact of the scaffold.

   It's a violation because:
   Criterion V requires that activities affecting quality shall be performed IAW procedures

   It's a minor violation because:
   This is an isolated failure procedural error that has no programmatic implications and no safety impact. The failure to perform an evaluation was an isolated occurrence and a subsequent evaluation determined that there was no impact on equipment

   It would be more than minor if:
   The licensee routinely had not performed engineering evaluations on similar issues, or if a subsequent evaluation determined that safety-related equipment was adversely affected.

2. NRC inspectors identified that one high radiation door was not locked as required by plant procedures. While the licensee's procedurally controlled administrative limit for area postings was exceeded, the door to the area was conservatively classified and did not exceed regulatory radiation levels to warrant posting as a locked high rad area.

   It's a violation because:
   Plant procedures require that activities shall be accomplished IAW procedures.

   It's a minor violation because:
   The requirement was a licensee administrative limit. The area was conservatively posted and no regulatory limits requiring posting were exceeded.

   It would be more than minor if:
   The area radiation levels exceeded the limits such that posting was required as a locked high rad area.

   Note: Because radiation protection matters do not apply to Appendix B, this procedural violation would best be cited under technical specifications and/or Reg Guide 1.33.

3. While performing a Reactor Protection procedure, an operator inadvertently operated the bypass switch which caused a single channel trip condition. The operator had failed to properly follow the procedure and adequately self-check to ensure the right switch was manipulated.

   It's a violation because: Criterion V requires that activities shall be

accomplished IAW with procedures

It's a Minor violation because:
This was an isolated procedural error. It was an isolated event, and no safety consequences resulted.

It would be more than minor if:
The error had caused a reactor trip or other transient.

4. A licensee procedure required that all valves specified on a locked valve list be indicated as locked on P&IDs. Inspectors identified valves, covered by 10 CFR Part 50 Appendix B, on the locked valve list that were not indicated as locked on P&IDs. All valves on the locked valve list were properly positioned and locked, as determined by field verification.

It's a violation because:
Activities were not performed IAW procedures.

It's a Minor violation because:
This is a non significant drawing discrepancy. All valves required to be locked were locked and properly positioned.

It would be more than minor if: More than one valve was in the required position, but not locked.

Criterion XI: Test Control Examples

1. A Limitorque operator motor is test wired for reading operating current during GL 89-10 valve testing. The valve is successfully cycled, data recorded, determined to be within the acceptable range and returned to service. However the ammeter used a 0-100 amp scale instead of a 0-10 amp scale as required by the procedure. Subsequent retest with the proper meter results in satisfactory amperage readings.

   It's a violation because:
   The test procedure was not followed

   It's a minor violation because:
   This is an isolated procedural error that had no impact on safety equipment. The mistake did not result in an actual equipment problem and was isolated to only a single mistake.

   It would be more than minor if:
   The retest revealed that the reading was actually out of specification.

2. Post-maintenance testing was performed on ten glycol air handling units during an outage of a Westinghouse ice condenser facility. All the required tests were performed, based on statements from licensee workers, but there is no record that an actual air flow test was conducted on two of the units. Based on indication in the control room, both air handling units have comparable air flow to those that have documented test results, and the ice condenser TS required air temperatures have all been well-within specification.

   It's a violation because:
   Criterion XI requires test results to be documented and evaluated to assure that test requirements have been satisfied.

   It's a minor violation because :
   This is a record keeping issue of low significance. There is reasonable assurance that test requirements were met as evidenced by actual air flow being satisfactory and TS temperatures being within limits.

   It would be more than minor if:
   Air flow in the two units was degraded but the TS required air temperature was within limits, or air flow was within limits but air temperatures were not within TS limits.

3 During a refueling outage, the licensee tested a charging pump at full flow conditions as required every 18 months. Vibration data taken during this test indicated a vibration of 0.324 inches per second (ips) exceeding the test allowable vibration of 0.320ips. As required by the test, the vibration measurements taken during the outage would have required that the pump vibration be considered in the Alert range and the surveillance frequency increased to every nine months. However, because the licensee did not identify that the test result exceeded the acceptance criteria, the test frequency was not increased and subsequent vibration testing revealed no vibration

degradation. The ASME Code acceptance criterion for vibration measurements is 0.325 ips.

It's a violation because:
Criterion XI requires that test procedures shall incorporate acceptance limits established by design documents. Measured vibration data exceeded the test procedure alert levels and the additional testing was not performed.

It's a minor violation because:
This limit was a licensee administrative limit. The ASME Code limit was not exceeded and there was no subsequent degradation of vibration of the pump.

It would be more than minor if:
1. Subsequent vibration testing revealed degradation into the action range.
2. The same issue affected a number of valves tested during the outage, or the issue was repetitive.

Criterion XVI: Corrective Action Examples:

1. The inspector during a review of the lighting in the safety injection pump room identified that the lighting is less than FSAR design levels for operator action. The licensee informed the inspector that this condition had been previously identified. However, the corrective action to increase the lighting had been given a low priority and had not been worked for two years after identification. Interviews with operators revealed that some had difficulties conducting surveillances or emergency drills without using flashlights in the safety injection pump room.

   It's a violation because:
   The licensee failed to take prompt corrective action for a condition adverse to quality, Criterion XVI.

   It's a minor violation because:
   This is an isolated failure to implement a corrective action that has no programmatic implications and no safety impact. Operators are procedurally required to carry flashlights and have had no problems functioning in this reduced light condition as evidenced by no operational errors due to poor lighting.

   It would be more than minor if:
   If degraded lighting condition contributed to an operator mistake.

2. In a records storage vault, the licensee observes a ceiling leak. Temporary containers are used to collect water during rainstorms. This "work around" continues for one year, with no functional problems occurring. However, during a heavy weekend rainstorm, when no one was available to set the containers, a significant amount of water infiltrates and some safety-related records are damaged, but readable.

   It's a violation because:

The licensee failed to correct the water intrusion problem in a prompt manner which could result in damage to records which violates the 10CFR50.71 requirement to maintain certain records.

It's a minor violation because:
This is an isolated failure to implement a corrective action that has no programmatic implications and no safety impact. The safety significance is negligible; in this case, no information was lost.

It would be more than minor if:
Required records had been irretrievably lost.

3. The system engineer for the safety injection system routinely walks down the accessible portions of the system, looking for component and equipment deficiencies. The inspector does a walkdown of this system and identifies a valve with a missing name-plate, in violation of plant procedures requiring that all valves are labeled. Discussions with operators reveal that this condition has existed for several years, but that since operators routinely refer to the P&IDs and the valve is routinely operated, all the operators have had no problem locating it. Operations believed that this condition had been identified by system engineering and were waiting for a fix.

It's a violation because:
The system engineer did not identify this condition adverse to quality.

It's a minor violation because:
This is an isolated failure to implement a corrective action that has no programmatic implications and no safety impact. The operators used the P&IDs and had no trouble identifying the valve location.

It would be more than minor if:
Improper valve manipulation had occurred due to the missing name-plate.

4. During construction of a safety-related concrete wall, a licensee QC inspector observes that an imbedded Richmond insert is cocked at an angle of 6 degrees from the plane of the wall. The specification is +/- 3 degrees. The licensee discovers that the worker who placed the insert failed to use a level as required. For reasons unknown, the condition report is closed, without corrective action. Subsequently, the same worker mis-orients three other inserts. All four inserts were later abandoned in place

It's a violation because:
The condition adverse to quality was not corrected and it recurred.

It's a minor violation because:
These mis-oriented inserts represent an isolated failure to implement a corrective action that has no programmatic

implications and no safety impact. It had no direct safety impact, since the out-of-specification inserts were abandoned in place.

It would be more than minor if:
A safety-related attachment had been made to an out-of-specification insert and placed in service.

5. A small leak occurs on a welded connection in the diesel generator day tank causing a slow drip of fuel oil onto the floor in the diesel room. Auxiliary operators note the leak and clean it with some paper towels. A deficiency tag is hung and maintenance comes to repair the leak. They use a sealant as a temporary repair and write a work order for a permanent welding repair, which is scheduled for the next outage. Later, the sealant gives way and additional leakage occurs, which soaks a safety-related solenoid and this time is discovered by an electrical engineer. The licensee subsequently determines that the wrong sealant was used in the temporary repair.

It's a violation because:
The licensee failed to correct adequately a condition adverse to quality.

It's a minor violation because:
This is an isolated failure to implement a corrective action that has no programmatic implications and no safety impact. The safety impact was negligible since the diesel generator was always operable.

It would be more than minor if:
An operational impact with the solenoid or other equipment, not affecting diesel operability, had occurred.

6. The reach rod for a safety-related valve is jammed and cannot be used. However, by walking down the stairs, the valve can be manipulated locally. This condition exists for two years and, despite complaints from the operators, it is not fixed. The NRC inspector notes that this work-around costs about one minute in operator response time and recognizes that manual manipulation of this valve is required by certain off-normal procedures. The valve is accessible during all these off-normal events.

It's a violation because:
The licensee failed to identify and correct a condition adverse to quality.

It's a minor violation because:
This is an isolated failure to implement a corrective action that has no programmatic implications and little safety impact. The valve could still be operated and the licensee determined that the extra time requirement would not affect recovery operations.

It would be more than minor if:
There were occasions where access to the valve could have been restricted for environmental reasons (heat, radiation, oxygen), coincident with a time in which the valve would need to be repositioned for a safety-significant evolution.

Fire Protection Examples

1. NRC Inspectors identified 3 ten-foot 2x4 lengths of wood left from a scaffolding disassembled the previous week, inside the room housing the auxiliary feedwater pumps. The licensee did not have an evaluation approving this temporary storage of transient combustible materials as required by the fire protection plan.

   It's a violation because:
   These transient combustible materials were not reflected in the fire hazards analysis.

   It's a minor violation because:
   This is an isolated failure to implement a fire protection plan requirement that has no programmatic implications and little or no safety impact. The licensee was able to show that the transient combustibles were well below the fire hazards analysis limits.

   It would be more than minor if:
   The fire loading was not within the fire hazard analysis limits but the fire detection and suppression capability in the room provided reasonable assurance that the pumps would remain operable in the event of a fire.

2. The FSAR states that there is one dry standpipe system isolation valve per level in the turbine building. The as-built configuration has two in-series isolation valves per level in the turbine building.

   It's a violation because:
   This represented a defacto change to the facility that had not been analyzed for an unreviewed safety question.

   It's a minor violation because:
   This is a failure to meet 10 CFR 50.59 requirements that involves a change to the FSAR description, where there was not a reasonable likelihood that the change to the facility would ever be an unreviewed safety question. This is an isolated failure that has no programmatic implications and no safety impact.

   It would be more than minor if:
   One level of the turbine building did not have any isolation valve resulting in a non functioning hose station for that level.

3. During an inspection of silicone foam penetration seals, the inspector noted that excess foam extrusion (3/8 inch) from repaired seals was less than the amount specified in the seal repair procedure (½ inch). However, the silicone foam vendor's instructions permit extrusions to as little as 1/4 inch.

   It's a violation because:
   The seal repair was not performed in accordance with e licensee's procedure.

   It's a minor violation because:

This is a violation of a licensee administrative requirement. Because the silicone foam vendors' instructions permit extrusions to as little as 1/4 inch, only the licensee's administrative limit was violated and no regulatory limit was violated.

It would be more than minor if:
Both the licensee and vendor procedures were violated such that the condition would have impacted the ability of the seal to perform its function.

4. The licensee's procedure required that heat tracing be energized in the diesel fire pump room from September 30 to April 30. In December, an inspector observed that the heat tracing was de-energized. The room temperature was 68 degrees, maintained by the steam boiler (50 degrees was the minimum temperature for operations). The temperature of the room is monitored and annunciated in the control room. An annunciator response procedure instructs the operator to check heat tracing if the room temperature alarms are received. The inspector verified that the temperature in the room had not dropped below 50 degrees since September 30.

It's a violation because: A licensee procedural requirement was not met.

It's a minor violation because:
This is an isolated failure to implement a procedural requirement that has no programmatic implications and little or no safety impact under the situation. The temperature had not dropped below the minimum temperature for operations.

It would be more than minor if:
The annunciator was not available or the room temperature had fallen below 50 degrees.

1. Inspectors identified that the licensee did not monitor the performance of emergency lighting associated with a motor-operated valve that requires manual operation during Appendix R scenarios. The licensee later determined that due to a procedural oversight, this particular emergency lighting had not been tested since inception of the Maintenance Rule. When the emergency lighting was later tested, it successfully passed.

   It's a violation because:
   The Maintenance Rule requires that licensees shall monitor the performance or condition of SSCs against license established goals, in a manner sufficient to provide reasonable assurance that such SSCs are capable of fulfilling their intended function.

   It's a minor violation because:
   This is an isolated failure to implement the maintenance rule that has no programmatic implications and no safety impact. The licensee's program regarding scoping of non-safety related systems, including emergency lighting, was otherwise satisfactory and this has minor significance because it was not a performance issue. The lighting was found to be functional, and the identified issue was not particularly significant because of compensatory measures that could be taken by the licensee if needed (flashlights).

   It would be more than minor if:
   This was more than an isolated example, if the SSC could not perform its intended safety function, or if compensatory measures could not be implemented.

2. The inspectors identified that the licensee had not scoped and thus failed to adequately demonstrate the performance or condition of functions for the auxiliary service compressed air system. This system is used as a backup to two 100% capacity instrument air systems (as described in the FSAR, which provide normal instrument air and safety related compressed air) with little performance problems.

   It's a violation because:
   It was not scoped within the maintenance rule and if the auxiliary service compressed air system had been placed in service and failed, it may have caused a transient to the operating unit.

   It's a minor violation because:
   This is an isolated failure to implement a maintenance rule requirement that has no programmatic implications and no safety impact. Had it been scoped, the routine maintenance being performed on the system was acceptable and would have met the requirements of the maintenance rule.

   It would be more than minor if:

It represented a more than isolated problem with scoping of SSCs within the maintenance rule or the maintenance being performed on the system would not have met the requirements of the maintenance rule.

3. The inspectors identified that the licensee failed to include the system unavailability time during TS required surveillance testing of the emergency diesel generators. Although the licensee conducts monthly EDG testing, the EDGs are unavailable to perform their intended safety function during TS surveillance testing for a few minutes during each monthly test. The unavailability time due to surveillance testing was insignificant when compared against total unavailability.

It's a violation because:
The licensee is required to establish adequate performance measures to demonstrate the SSCs remain capable of performing their intended functions.

It's a minor violation because:
This is an isolated failure to implement a maintenance rule requirement to track the system unavailability during surveillance testing that has no programmatic implications and no safety impact. The small contribution to unavailability due to the surveillance testing is insignificant when compared to total unavailability.

It would be more than minor if:
The contribution to unavailability due to surveillance testing was significant or resulted in exceeding established performance measures.

4. The inspectors reviewed a failure of an SSC and determined that the licensee did not identify this as a maintenance preventable functional failure (MPFF). The licensee determined this to be an isolated example, and finds that had this failure been included, no performance criteria would be approached or exceeded. The error was due to an oversight by the system engineer, who failed to properly identify this failure as an MPFF on a procedural attachment (the attachment is to be completed and forwarded to appropriate plant personnel for Maintenance Rule consideration).

It's a violation because:
MPFFs are to be considered when determining the effectiveness of maintenance.

It's a minor violation because:
This is an isolated failure to implement a maintenance rule requirement to identify the failure as an MPFF that has no programmatic implications and no safety impact. It did not result in exceeding the overall performance criteria established for this SSC.

It would be more than minor if :
This was a routine practice by the licensee (failing to consider MPFFs), if a performance criteria would have been exceeded for

an extended period of time without establishing appropriate goals and monitoring, or if more than an isolated example.

c. The licensee develops and approves a preventive maintenance procedure (not required to be approved by the plant onsite review committee) that would require a change be made to the plant TS, and does not perform an evaluation pursuant to 10CFR50.59. When requested to perform the PM task, control room operators identified that the PM task would violate TS, and did not perform it.

It's a violation because:
A procedure was changed that would require a change to the TS, and NRC approval was not obtained.

It's a Minor violation because:
The licensee own established process identified the problem prior to implementation, and the problem did not affect any equipment and had no safety consequences.

It would be more than minor if:
The task had been performed.

2. FSAR steps for transferring to the recirculation phase following a LOCA, states to perform the transfer by first using Train A then using Train B. The EOPs were changed to allow concurrent use of both trains.

It's a violation because:
The 50.59 screening review performed to change the EOPS did not recognize that it resulted in a change to the FSAR.

It's a minor violation because:
This is a failure to meet 10 CFR 50.59 requirements that involves a change to the FSAR description, where there was not a reasonable likelihood that the change to procedure would ever be an unreviewed safety question. This is an isolated failure that has no programmatic implications and no safety impact. A subsequent evaluation concluded that concurrent use of both trains was acceptable

It would be more than minor if:
The evaluation determined concurrent use of both trains was unacceptable.

3. The FSAR stated that each column of ice condenser baskets consisted of four baskets. The licensee modified the baskets to add a fifth basket without performing a 50.59 review. The addition of the fifth basket did not affect the thermal hydraulic performance of the ice condenser.

It is a violation because:
It was a change to the facility as described in the FSAR.

It's a minor violation because:
This is a failure to meet 10 CFR 50.59 requirements that involves a change to the FSAR description, where there was not a reasonable likelihood that the change to procedure would ever be

an unreviewed safety question. This is an isolated failure that has no programmatic implications and no safety impact.

It would be more than minor if:
The fifth basket caused changes in steam flow following a LOCA that would have resulted in containment design pressure being exceeded or other event constituting a USQ.

4. The licensee approved a temporary procedure to flush the shell side of a steam generator blowdown heat exchanger. The 10CFR50.59 screening found that the procedure did not affect the facility as described in the FSAR. However, the procedure change opened a valve that bypassed a high radiation function of a steam generator blowdown radiation monitor which was described in the FSAR.

   It was a violation because:
   The10CFR50.59 incorrectly found that the procedure change did not affect the facility as described in the FSAR.

   It's a minor violation because:
   This is a failure to meet 10 CFR 50.59 requirements that involves a change to the FSAR description, where there was not a reasonable likelihood that the change to procedure would ever be an unreviewed safety question. This is an isolated failure that has no programmatic implications and no safety impact. In the event of a steam generator tube rupture, the emergency operating procedure directed operators to line up to the monitored tank, so no unmonitored release would occur.

   It would be more than minor if:
   The procedure lined up the radioactive water to an unmonitored release path and a release occurred.

5. The licensee identified an error in a revised calculation for an analysis of radiation dose from a release during the design basis LOCA. The dose operators could receive was increased, but was less than FSAR and regulatory limits.

   It is a violation because:
   The calculation failed to identify that a de facto change had been made to the facility without an attendant 10CFR50.59 analysis.

   It's a minor violation because:
   The FSAR dose rates did not change significantly and no regulatory limits were exceeded. This is a failure to meet 10 CFR 50.59 requirements that involves a change to the FSAR description, where there was not a reasonable likelihood that the change to procedure would ever be an unreviewed safety question. This is an isolated failure that has no programmatic implications and no safety impact.

   It would be more than minor if:
   The FSAR values changed significantly or if regulatory limits were exceeded.

Technical Specification Examples:

1. The TS require a primary sample be taken and analyzed within two hours of a power change in excess of 20%. The inspector, while reviewing control room operator logs determined that after a recent power increase from 60-85%, the chemistry sample was taken and analyzed in two hours and 35 minutes. The sample was in specification.

   It's a violation because:
   TS was violated

   It's a minor violation because:
   This is an isolated failure to implement a requirement that has no programmatic implications and no safety impact. The sample delay was not significant.

   It would be more than minor if:
   The sample had not been conducted or was delayed to the extent that the sample results were not reliable.

2. The TS states that the members of the Offsite Safety Review Board will have, at a minimum, a bachelor degree in a technical field. One member has a degree in business only.

   It's a violation because:
   TS was violated

   It's a minor violation because:
   This is an isolated failure to implement a requirement that has no programmatic implications and no safety impact.

   It would be more than minor if:
   The licensee fails to revise the Technical Specification (the violation would be cited for failure to take adequate corrective actions).

3. The TS requires that 1/3 of all safety-related molded case circuit breakers (MCCB) will be tested each refueling outage (such that all are tested every three outages) and that the instantaneous trip currents will be recorded for trending purposes. The NRC inspector finds that two outages ago during testing, the instantaneous trip current for a safety-related circuit breaker was not tested or recorded. The last recorded trip current for this breaker was five outages ago. The subject MCCB was subsequently found to be in specification.

   It's a violation because:
   The TS was violated, because all required tests were not performed on the breaker within three outages.

   It's a minor violation because:
   This is an isolated failure to implement a procedural requirement that has no programmatic implications and no safety impact. There is no safety significance, since all other tests on the MCCB were satisfactorily at the time of the testing and the trip was subsequently found to be in specification.

It would be more than minor if:
The subject MCCB was out of specification or additional examples were discovered.

4. The TS states that 10 percent of all safety-related snubbers are to be tested each refueling outage and that if one failure occurs, an additional 10 percent sample must be tested during the same outage. One snubber in the original population of 17 snubbers (there are a total of 168 safety-related snubbers) fails, necessitating an additional sample. However, because of an oversight by the licensee, only 16 additional snubbers (with no failures) are tested before startup.

   It's a violation because:
   The TS was violated as only 16, instead of 17, were additionally selected for testing

   It's a minor violation because:
   This is an isolated failure to implement a procedural requirement that has no programmatic implications and no safety impact. There is no safety significance, since none of the additional 16 snubbers failed.

   It would be more than minor if:
   A failure had occurred in the additional sample, necessitating yet another expansion of the sample, and this had not been accomplished.

Other Minor Violation Examples:

1. **Exceeding administrative limit**

The NRC requires licensees to maintain the total effective dose equivalent (TEDE) to five rem per year. The licensee established by procedure an administrative limit of 2 rem per year. Plant manager approval was required for any individual to exceed the procedural limit. Contrary to the licensee's program, a maintenance technician received 2.7 rem in one year without approval from the plant manager.

It's a violation because:
The licensee is required to follow their procedures per TS 6.8.1.

It's a minor violation because:
This was an licensee administrative limit. The worker was still within federal limits.

It would be more than minor if:
Multiple examples were identified of failures to satisfy station radiation protection procedures indicating a failure to maintain and implement programs to keep exposures ALARA.

2. **Work in progress**

An NRC inspector is observing a surveillance test. The I&C technician mistakenly omits one step during the test. After performing additional steps the mistake is identified and the technician immediately suspends the test to review the situation.

It's a violation because:
The licensee is required to follow their procedures per 10 CFR 50, Appendix B, Criterion V and TS 6.8.1 if applicable.

It's a minor violation because:
It is work in progress and there were no adverse consequences.

It would be more than minor if:
The mistake is not discovered until a supervisor review of the completed and closed out procedure and there were some adverse consequence associated with the failure (if no adverse consequences existed it would still be considered minor).

3. **Post work test discovers error**

During installation of a modification, the licensee failed to follow the installation procedures and a check valve is installed backward. QC does not detect the error. During a post-modification test, prior to returning the system to service, the licensee discovers the problem.

It's a violation because:
The licensee failed to correctly translate the design to the as-built configuration.

It's a minor violation because:
It is work in progress and there is no safety consequences.

It would be more than minor if:
The system was returned to service and declared operable.

4. **Minor dimensional/time nonconformances**

The licensee's security fence is required to be 12 feet tall. The NRC discovers that, in one section, the fence is only 11 feet 10 ½ inches tall. The licensee is required to submit an LER within 30 days of the event. The LER is submitted 32 days following the event.

It's a violation because:
Both are regulatory requirements.

It's a minor violation because:
Neither is a significant dimensional discrepancy.

It would be more than minor if:
The fence had been significantly shorter (e.g. 11 feet) or if no LER was submitted

5. **General procedural noncompliance**

An operating procedure requires the shift supervisor to advise the station manager prior to making any mode changes. A mode change is made without this notification.

It's a violation because:
The licensee is required to follow their procedures per 10 CFR 50, Appendix B, Criterion V and TS 6.8.1, if applicable.

It's a minor violation because:
This is a minor procedural error that had no impact on safety equipment and caused no safety consequences. All requirements for the mode change were met except this notification.

It would be more than minor if:
A mode change as made without all required equipment being operable.

6. **Minor reporting problems**

In an LER, the licensee reports that a particular problem had occurred twice before. The NRC later discovers that the problem had actually occurred three times previous.

It's a violation because:
Under 10 CFR 50.9, the licensee is required to provide complete and accurate information in all material respects.

It's a minor violation because:
This is an isolated failure to include accurate information that has no programmatic implications and no safety impact. The failure to report the third occurrence was probably an inadvertent mistake.

It would be more than minor if :
The licensee was aware of the omission and submitted the LER anyway.

7. **Minor calculation/drawing problems**

A controlled design drawing shows a plug valve where a ball valve is actually installed. This problem occurred because of an isolated oversight by the licensee.

It's a violation because:
The design is required to be correctly translated into drawings.

It's a minor violation because:
This is an non significant drawing deficiency.

It would be more than minor if:
Operation of the system had been adversely affected by the difference in valves.

8. **Minor measuring and test equipment discrepancies**

A torque wrench exceeding its calibration interval was used on a safety-related job. The wrench was actually in tolerance (when later checked)

It's a violation because:
The licensee is required to assure that M&TE used in activities affecting quality are calibrated at specified intervals.

It's a minor violation because:
This is an isolated failure to calibrate M&TE that has no programmatic implications and no safety impact. The wrench was actually in tolerance (when later checked) and the incident was isolated.

It would be more than minor if:
The wrench was out of tolerance, resulting it a lack of reasonable assurance that torque being applied was adequately performed on safety-related systems, or the issue was not isolated.

9. **Nonconforming parts accepted but not installed**

A solenoid of incorrect specification is screened though receipt inspection and placed in the warehouse. When the solenoid was withdrawn to be installed, an electrician noted that it was not the correct type.

It's a violation because:
The licensee is supposed to establish controls to prevent nonconforming parts from being used inadvertently and the wrong part could have been installed if it had not identified by the electrician.

It's a minor violation because:
It was work in progress and no adverse consequences resulted.

It would be more than minor if:
The valve were installed and the system was returned to service.

10. **Minor USAR discrepancies**

The FSAR states the volume of the RWST is 250,000 gallons. The actual volume is 248,000 gallons.

It's a violation because:
The facility was not consistent with the FSAR, and an analysis was not performed pursuant to 10 CFR 50.59.

It's a minor violation because :
This is a non significant isolated dimensional discrepancy.

It would be more than minor if:
The accident analysis assumed 250,000 gallons of useable volume above the suction point and the actual volume required accident analysis calculations to be re-performed to assure the accident analysis requirements were met.

Appendix E

Thresholds for Documentation

Inspectors should use Figure 1 and group 1, 2 & 3 questions in determining if an issue should be documented in an inspection report. The decision points in this process are discussed in detail below:

a. Issues : The inspector first makes an observation or collection of observations which is believed to be an issue. The inspector should determine whether the issue has sufficient significance to warrant further analysis or documentation. This is done by determining whether the issue is a "Minor" concern.

b. Minor Issues/Violations (Group One Questions):

If the answer to any of the below questions is "Yes" the issue could be considered more than minor and the inspector should ask if the issue affects a cornerstone by asking group 2 questions. If the answer to all the below questions is "No" the issue can be considered Minor. However, the inspector should determine whether the issue has extenuating circumstances by reviewing group 3 questions.

Group One Questions

(1) Does the issue have an actual or credible impact on safety?
(2) Does the issue suggest a programmatic problem that has a credible potential to impact safety and is more than an isolated case?
(3) Could the issue be reasonably viewed as a precursor to a significant event?
(4) If left uncorrected would the same issue become a more significant safety concern ?
(5) Are there any associated circumstances that add regulatory or safety concerns, (i.e. apparent willfulness, licensee refusal to comply)?
(6)Does the issue relate solely to NRC limits and not licensee administrative limits?
(7) Does the issue relate to collecting or reporting performance indicators such that a threshold could be or may have been exceeded?

c. Issues Affecting Cornerstones (Group 2 Questions):

Most issues discussed in inspection reports are those affecting cornerstones, and violations of requirements. The SDP can (at present) only evaluate risk significance and assign colors to those issues which affect a cornerstone. The group 2 questions should be used to determine whether an issue affects a cornerstone as follows:

If the answer to any question is "yes", the issue should be analyzed by the SDP process, assigned a color, and documented in the inspection report. If the answers to all group 2 questions are "no" then the inspector should determine whether there are

extenuating circumstances which would warrant documenting the issue by reviewing the group 3 questions.

Group Two Questions

Reactor Safety - Initiating Events, Mitigating Systems, & Barrier Integrity

(1) Could the issue cause or increase the frequency of an initiating event?
(2) Does it affect the operability, availability, reliability or function of a system or train in a mitigating system?
(3) Could it affect the integrity of fuel cladding, the reactor coolant system, and/or reactor containment?
(4) Could it involve degraded conditions that concurrently influence any mitigation equipment and/or initiating event?

Reactor Safety - Emergency Planning

(1) Does it involve a failure to meet or implement a planning standard (10CFR50.47(b) and Appendix E to Part 50) or other regulatory requirements?

Radiation Safety - Occupational

For ALARA issues:
(1) Does the actual job dose exceed the projected dose by >50%, AND
(2) Does the 3 year rolling average collective dose exceed 135 person-rem/unit for a PWR or 240 person-rem/unit for a BWR, AND
(3) Is the actual job dose > 5 person-rem?
(4) Does it involve a failure of one or more radiation barriers that result in, or could result in, a significant unintended or unplanned dose?

Radiation Safety - Public

(1) Does it involve an occurrence in the licensee's radiological *effluent monitoring* program that is contrary to NRC regulations or the licensee's TS, ODCM, or procedures?
(2) Does it involve an occurrence in the licensee's radiological *environmental monitoring* program that is contrary to NRC regulations or the licensee's TS, ODCM, or procedures?
(3) Does it involve an occurrence in the licensee's radioactive *material control* program that is contrary to NRC regulations or the licensee’s procedures?
(4) Does it involve an occurrence in the licensee’s radioactive material transportation program that is contrary to NRC or DOT regulations or licensee procedures?

Physical Protection

(1) Does it involve a nonconformance with safeguards requirements

Fire Protection
(1) Does it involve impairment or degradation of a fire protection feature.

d. Extenuating Circumstances (Group Three Questions):

If an issues is either minor or more than minor and does not affect a cornerstone, there should be extenuating circumstances associated with the issue in order to be documented. The following questions in group 3 should be used to determine whether an issue has extenuating circumstances.

(1) Does the issue involve willfulness, including discrimination?
(2) Does the issue have potential for impacting the NRC's ability to perform its regulatory function?
(3) Is documenting this issue necessary to close an open item, licensee event report or allegation?
(4) Does the associated technical information relate directly to an issue of agency-wide concern, i.e. a generic safety issue?
(5) Does the issue provide substantive information regarding cross cutting issues which is not captured in individual issues in the report or indicates performance trends or patterns?
(6) Is the finding a violation greater than minor?

If all the answers to the above questions are "No" the issue does not have extenuating circumstances and would not normally be documented. If the answer to any question is "yes" the issue should be documented as a finding or a violation without a color.

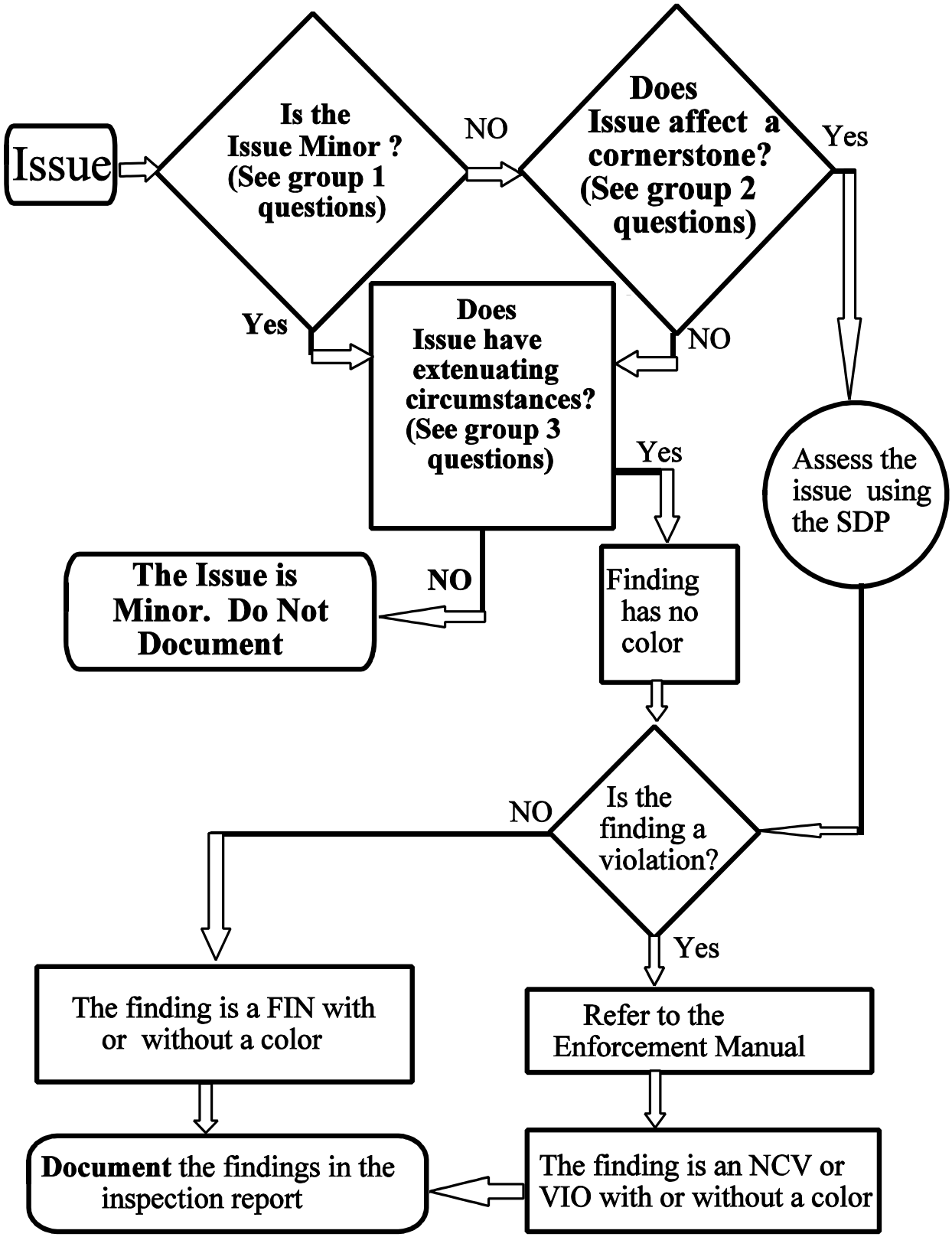
Issue
Is the Issue Minor ? (See group 1 questions)
NO
Does Issue affect a cornerstone? (See group 2 questions)
Yes
Yes
Does Issue have extenuating circumstances? (See group 3 questions)
NO
Yes
Assess the issue using the SDP
The Issue is Minor. Do Not Document
NO
Finding has no color
Is the finding a violation?
NO
Yes
The finding is a FIN with or without a color
Refer to the Enforcement Manual
Document the findings in the inspection report
The finding is an NCV or VIO with or without a color

Figure 1